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By emphasizing flexibility and realism to serve our interests, a new policy of "Selective Responsibility" will improve our ability to act in this complicated, multi-polar world.

Regarding Soviet-American relations, this new approach will enable us better to distinguish areas of convergence and divergence of interests.

In dealing with the Soviet Union, we have oscillated between attitudes of undue trustfulness and of total suspicion. During periods of "thaw," we foster the illusion that the Soviet Union will act "reasonably" on all issues; during periods of "freeze" we harbor the opposite fantasy.

The truth is that there will be areas where we can cooperate with the USSR. The Nuclear Non-Proliferation Treaty is an obvious case in point. But there will equally be areas where we must firmly oppose the Soviet Union—as in the Mediterranean. We cannot afford a policy which ignores these distinctions.

Congress—especially the Senate—has an important role to play in implementing this new policy of Selective Responsibility. It can do so by conducting a continuing review of our foreign policy to see if it reflects the real interests of America.

Congress can perform a particularly valuable function in helping to assure that our foreign policy is consistent with domestic opinion and domestic social needs.

Through their broad contacts with their constituents, members of Congress can help gauge the impact of our foreign policy at home. This function is vital to assure that we no longer attempt ambitious foreign commitments—especially military commitments—which lack the support of a consensus in America.

But to perform this function, Congress must be informed. One minimum measure is that the President should undertake fully to inform Congress in advance of any new commitment of American troops abroad, unless a clear emergency prevents him from doing so. If possible, he should request a joint resolution of Congress for this purpose.

No one approach to foreign affairs can be guaranteed to work. Too much depends upon the incalculable factors of good or bad luck; the skill and judgment of our leaders; the rationality and predictableness of those who oppose us. Nevertheless, I am hopeful that the approach I have outlined will be of some assistance in charting constructive new directions in America's foreign policy.

MIDEAST PEACE

Mr. JAVITS. Mr. President, I ask unanimous consent to have printed in the RECORD a speech by Senator SCOTT entitled "Mideast Peace Must Be Negotiated by Israel, Arabs."

There being no objection, the speech was ordered to be printed in the RECORD, as follows:

SENATOR SCOTT SAYS MIDEAST PEACE MUST BE NEGOTIATED BY ISRAEL, ARABS

PHILADELPHIA, Pa.—U.S. Senator Hugh Scott (R.-Pa.) said last night that "President Nixon has taken the initiative to encourage a fairly-negotiated Arab-Israel peace settlement."

Speaking before the Cardozo Lodge at the Marriott Motor Inn, where he received the Justice Benjamin N. Cardozo Award, Senator Scott said:

"President Nixon has taken the initiative to encourage a fairly-negotiated Arab-Israel peace settlement.

"The announcement that there will be an effort to bring the parties together should not be interpreted as an effort to impose a settlement on the contending parties in the Middle East.

"I am confident that President Nixon

knows full well that the only lasting settlement must be one to which Israel and the Arab states freely subscribe.

"The Arabs, the Russians and the French have been talking about a political solution. We are not deceived by nice words. What they mean by that is a Big Power settlement to be imposed on the Arabs and Israelis which will fall far short of a genuine peace and which, indeed, will be prejudicial to peace and, perhaps, conducive to the resumption of war in the near future.

"The Russians and the Arabs have been waging a war of nerves to achieve this objective. It is argued that we may be on the verge of a Great Power confrontation—that we may be slipping into a Third World War. It is argued that we cannot ask the Arabs to make peace with Israel, that they are too proud and we should not humiliate them. It is argued that Israel has been stubborn by insisting on a negotiated peace.

"I suggest that we should not be swayed or stamped by any kind of false hysteria which may intimidate American opinion. I suggest that we look at the Middle East with calm and with reason. Let us reject the efforts of the Russians and the French to write U.S. policy. We are living in the 20th century. We cannot agree to a return to 19th century imperialism which permitted Great Powers to impose their will on other peoples. Neither the French nor the Russians have any right to dictate the future course of Middle East relationships. Surely, the Arabs have memories of their past experience with French rule when France had mandates in the area. And surely the Arabs must be aware of the Soviet Union's record in Czechoslovakia.

"Let us not be deceived by propaganda fakery which would lead us to believe that the Arabs states mean peace when they talk of political solution. Bear in mind that Syria, Iraq and the Arab terrorists have all rejected the November 22 UN resolution and the Jarring mission which it created.

"A picture is worth many columns of newsprint and that front-page picture showing the lynchings in Baghdad last week conveys a graphic message. The brutal and barbarous hangings in Iraq have again exposed the virulent hostility of Arab terrorism which prevails in Syria and Iraq and among the Arab terrorists.

"As of this moment, I have not heard of any Soviet condemnation of the brutal execution of Jews in Iraq. If the Soviet Union were honestly committed to a real settlement in the Middle East, it would long ago have joined with other nations in censuring terrorism in the Middle East and in summoning the Arab states to a recognition of their obligation to live at peace with their neighbors.

"A real Arab-Israel peace must be a major objective of American policy. This means that Arabs and Israelis must reach agreement on future boundaries. There is nothing sacred or eternal about the present temporary armistice or cease-fire lines. The boundaries of the future must be based on realistic agreements, and such boundaries reached by understanding and negotiations will become bridges and not walls.

"The UN has a role to play in this, but its major function must be to encourage Arabs and Israelis to meet together. The UN will not serve the best interests of peace if it continues to keep the parties apart and if it seeks to restore demarcation lines and machinery which proved feeble and futile when they were tested by renewed aggression in 1967.

"The Great Powers have a role to play. It is to encourage all the peoples in the Middle East to join together in mutual respect, in cooperation and in the preservation of peace.

"I am pleased that President Nixon has taken the first step in that direction."

DEPLOYMENT OF ANTI-BALLISTIC-MISSILE SYSTEM

Mr. COOPER. Mr. President, a group of Senators had planned to discuss today the implications of deployment of the anti-ballistic-missile system. There has been a long debate over the recommendation to increase salaries. It is very late in the evening. At least 14 Senators indicated a desire to speak and enter into a discussion of the problems the system will cause for our country and give their reasons for desiring a reversal of the decision made last year to support its deployment.

I am very sad that the Senator from Michigan (Mr. HART) is not here, because he was a principal figure in last year's effort to strike funds for the deployment of the system. He is away, but he will return and he will take an active part in the movement this year to halt this dangerous and costly system.

My statement is brief. I know some of my colleagues have engagements, and if they want me to yield to them during my statement, I shall be glad to do so. I am glad to see here also the distinguished chairman of the Armed Services Committee (Mr. STENNIS), and I shall be happy to have his comment.

Mr. President, during the last session of the Congress, the Senate debated and voted upon one of the most important issues that face this country—the deployment of the Sentinel anti-ballistic-missile system. Its awesome strategic and policy implications, its great cost, the questions that many outstanding scientists and technicians have raised about its feasibility, and, above all, the concern that it will not provide security to our country, but will only launch another nuclear arms race of vast proportions, challenge the initial decision made in the last Congress to deploy the system.

Last year the Congress authorized and appropriated over \$1 billion for the initial deployment of a so-called "thin" system: a total of \$700.3 million was appropriated in the military procurement bill; \$227.3 million in the military construction bill; and the Atomic Energy Commission bill included \$324.5 million for Sentinel components. In previous years, something on the order of \$3 billion have been appropriated for research.

Prior to Secretary McNamara's speech in San Francisco in September 1967, deployment had not been recommended by the executive branch. But on January 22, 1967, the administration of President Johnson, speaking through the posture statement of former Secretary of Defense Robert McNamara, recommended approval of the so-called "thin" system, designed to defend against the suggested nuclear threat of Communist China.

Senator RICHARD RUSSELL, then chairman of the Senate Armed Services Committee, said during the debate that he considered its true purpose to be a "building block" in the construction of a "heavy" system against a nuclear attack by the Soviet Union. No one can estimate its cost accurately—\$5.5 billion for the "thin" system and \$40 billion for the "heavy" system is one estimate provided by the Department of Defense,

ment of Agriculture has been used by the Florida tomato growers to play a cruel trick on one of their most perishable industries. They state flatly that Florida growers are attempting to force the American consumer to eat large and highly priced tomatoes. They also make a considerable point of the fact that most Mexican growers spend about half of their cost of growing tomatoes in the United States on items such as machinery, seed and other equipment.

Mr. President, when this embargo was first levied by Mr. Freeman, I telegraphed him urging that his order be suspended pending more hearings and further consideration. He replied that he had no choice; that his action was mandatory under a 1937 law which was invoked on behalf of the Florida tomato growers. I wish to point out that there is considerable doubt about whether this law makes the restrictive actions of the Secretary of Agriculture mandatory or discretionary. I submit that if it is mandatory and if it can be invoked by a group of domestic growers in a fashion that proves detrimental to domestic economic interests of another section, then that law should be changed. But I firmly believe that thorough investigation will show that this is a statute which permits the embargoing of a foreign product rather than requiring it.

Albert Conrad, secretary-manager of the West Mexico Vegetable Distributors Association with headquarters in Nogales, claims the embargo was imposed as a purely protective measure to insure a larger Florida tomato crop. Says Mr. Conrad:

The ultimate victim in all of this will be the American consumer who will have to pay higher prices because of the lack of Mexican competition. The Florida growers cannot possibly fill the gap in the market caused by this embargo. Mexico usually supplies about 50% of the U.S. winter tomato consumption.

Mr. President, this is an extremely involved question. I have been told that the late Judge Learned Hand is commenting on the 1937 law involved in this case once described it as a "veritable verbal thicket of monstrous proportions." For this reason it is impossible for me here today to go into each and every facet of this problem. However, I claim that its very complexity argues against the kind of sudden action that was engaged in by Mr. Freeman.

In all events, I am informed that the new Agriculture Secretary, Mr. Clifford M. Hardin, is paying close attention to the developments in the tomato controversy along the American-Mexican border. I sincerely hope that the wisdom of rescinding this embargo will soon become apparent to him and that the Nixon administration will quickly issue the necessary order to right a grave wrong.

"U.S. FOREIGN POLICY: 'SELECTIVE RESPONSIBILITY'"—SPEECH BY SENATOR GOODELL

Mr. JAVITS. Mr. President, I ask unanimous consent that a thoughtful address by my colleague, Senator GOODELL, entitled "U.S. Foreign Policy: 'Selective Responsibility,'" delivered before the New York State Society of Newspaper

Editors on February 3, 1969, be printed in the RECORD.

There being no objection, the speech was ordered to be printed in the RECORD, as follows:

U.S. FOREIGN POLICY: "SELECTIVE RESPONSIBILITY"

For the United States, this is a time of both charisma in space and catharsis on earth. If Apollo is our charisma, Vietnam is our catharsis. And we agonize in earnest efforts to find better ways here on earth, both nationally and internationally.

The New Year has opened auspiciously with the agreement in Paris to proceed with substantive talks on Vietnam. This is the most hopeful sign yet that we may be on the road to resolving the tragic Vietnam conflict, which has divided our people and diverted our resources for so long. The negotiations will be long, difficult and tortuous. But with skill, good fortune, and some reasonableness on all sides, I am hopeful that the Nixon Administration will be able to achieve an honorable settlement of the war.

In foreign policy, we know that Vietnam has narrowed our vision. And we sense the one tree but not the forest perspective. While it is true that Vietnam dominates our vision, it is also true that it has led to an outlook insisting that there be no more Vietnams. At stake, now, is not the past, but the future. What principle should guide our international commitments, our involvement, its degree and kind? What principle can serve at once the interest of our country and that of humanity in the common cause of international peace with justice?

"Containment" has been used to justify our country's involvement in Vietnam. This principle, first announced in 1947, has led the United States to ideological commitments around the world.

During the years of the Cold War, there developed a broad consensus in support of "containment" and against an international communist movement which was viewed as monolithic. This consensus led the United States to establish a network of military alliances from Europe to Asia. And it led to U.S. anti-communist intervention in countries throughout the world.

While "containment" has applied to foreign policy needs of the past, we have now employed it to such an extent, that we are, in the eyes of the world, fully committed.

Committed to what? We are asked. To peace, when there is war? To stability when there is instability? To security, when there is insecurity?

"Containment" does not seem to give us answers. In addition, there is Vietnam, which has eroded the "containment consensus" of the past.

We have learned that our resources cannot be used with equal effectiveness everywhere in the world. We have learned—the hard way—that we cannot be the world's policeman.

Since "containment" can no longer guide us, we must develop a new approach to foreign affairs.

The new approach I am suggesting today is "Selective Responsibility." It would use a much greater selectivity in the involvement of our resources abroad. It would avoid the automatic and rigid responses that too often have marred our past policies. It would recognize that the world is no longer simply bi-polar, but has added dimensions of a political multi-polar world. It would accept the fact that threats to our security and interests can come from a variety of sources, not just the Soviet Union.

"Selective responsibility" would give full recognition to America's vital role in promoting peace and justice abroad. But it accepts the fact that we cannot—and should not—attempt to preserve the status quo in every nation throughout the globe faced with internal revolution.

In short, such a new approach should steer

an intelligent middle course between a rigid "containment" policy and an obviously unacceptable return to isolationism.

Isolation could only close our opportunities in the world to the reciprocal benefits made possible by the exchanges among people of ideas and economic benefits.

A principle of "Selective Responsibility" requires us to bear the following points in mind when we decide whether and to what extent we commit our economic or military resources in any part of the world.

1. We must look at our interests throughout the globe in *real* terms, and not in *romantic* or *ideological* terms. In deciding how we should respond to a crisis abroad, we must focus on the actual economic, strategic or other benefits we could obtain by our actions. The world is far too complicated to permit us to be obsessed with our prestige, we must be concerned mainly with our real interests.

2. We must stop thinking of foreign policy as something quite separate from domestic issues. Every major commitment abroad affects our domestic scene, and affects our ability to deal with the great social problems within our borders.

In deciding how much resources to commit to a crisis abroad, it is essential to assess how such a commitment would affect opinion at home, and how it would affect the great domestic programs for improving our cities and meeting the needs of our poor.

We failed to judge the domestic impact of our Vietnam policy—upon the consciences of millions of Americans, upon the families whose sons were dying, upon the youth in our colleges, and upon our social programs. These failures, among others, have made the war so deeply divisive for our nation.

Our overall military spending must be considered in the context of domestic needs. There must be a reassessment of defense policy with serious examination of what has been called the "military spending sponge."

It is presently estimated that expenditures for Vietnam will decline by \$3.5 billion due to the bombing halt, but non-Vietnam defense spending will rise by \$5 billion. These figures are a startling blow to those of us who would like to see savings from Vietnam transferred to pressing needs at home, not automatically siphoned off for more military hardware.

3. We must make a realistic assessment of how receptive the people of any foreign nation are to our assistance, before embarking on a commitment of our economic or military resources there. Where the local population welcomes our presence, we can accomplish a great deal of good with a relatively small investment. Where the local population repudiates us, even a very large investment tends to be wasted.

4. We cannot and will not attempt to do the things which the other nations of the world can do for themselves either individually or by indigenous regional arrangements.

Countries, using their own resources, must help themselves through involvement of their own people in effective community action programs.

5. Finally, and most important, we must avoid open-ended commitments. If we are deciding whether to involve our men, our arms, or our money in a foreign crisis, we must have some clear idea—even though we do not choose to announce it—of the maximum we are willing to commit. And we must have adequate contingency plans which prepare us for the eventuality that our proposed course of action fails to work as intended.

In particular, we must recognize that any decision to commit American troops to a foreign conflict tends to become "irreversible." If the troops we send do not achieve their immediate military objective, we become subject to great pressures to add more troops—i.e. to escalate the conflict. This is what happened in Vietnam.

while others believe the cost could total \$70 billion or more.

On three occasions during the last session, the senior Senator from Michigan, PHILIP A. HART, and I, joined by other Members of the Senate, including Senator SYMINGTON, of Missouri, introduced amendments to strike from various bills the authorization, or appropriations for deployment of the system. Our amendments did not eliminate or reduce funds for research and development. While the amendments were defeated by votes of 28 to 31, 34 to 52 and 25 to 45, respectively, the number of Senators voting favorably upon the amendments totaled over 40. Other amendments to strike all funds for the ABM system were offered by Senator NELSON of Wisconsin, Senator Young of Ohio, and the former Senator from Pennsylvania, Joseph Clark.

Although the amendments were defeated, we were successful in bringing this issue before the Senate for debate, and to the attention of the people of the United States. Further, it was developed clearly in the closed-door session of the Senate, held upon my motion, that the Armed Services Committee had not availed itself of the expert opinions of scientists and authorities outside the Government, at least in its hearings. Distinguished scientists, such as the former presidential scientific advisers, Nobel Prize winners in nuclear physics, and distinguished authorities in international affairs oppose deployment of Sentinel ABM system. Many believe that the ABM system is not yet technically advanced for effective deployment; that deployment would only lead to the production of new offensive weaponry of a more dangerous nature, than now exists, and to a new arms race.

Today, I shall not detail the arguments made last year against the deployment of the Sentinel system. My purpose today and that of my colleagues who so vigorously opposed appropriations for deployment is to give notice to the Senate and the country that we shall continue to contest and oppose the appropriation of funds for deployment. We shall do our best to bring before the Senate and the country the available facts which question its feasibility and effectiveness for security. We shall present political and humane arguments against its deployment. While I cannot speak for the administration, I am confident that President Nixon will, as he reviews the defense policies which affect security of our Nation; will review and weigh carefully this most important question. We are hopeful that full debate in the Senate and the opinion of the country will be of value to the President in this most important decision.

The reasons which led Senator HART and me to submit our amendments last year, among others who submitted amendments, and the support of so many Members of the Senate, including Senator MANSFIELD, the majority leader, Senator SYMINGTON, the distinguished member of the Senate Armed Services Committee, Senator FULBRIGHT, chairman of the Senate Foreign Relations Committee, Senators Aiken, Javits, Case,

Percy, Brooke, Scott, George McGovern, Edward Kennedy, and many others; particularly Senators NELSON and Young, who introduced resolutions, are still valid.

The Chinese have made little, if any, progress toward the development of a nuclear missile system and if it were used it would as Senator RUSSELL said last year in the debate bring upon Communist China its certain destruction.

The Soviet Union has not proceeded to install a substantial and effective system. The United States and the Soviet Union continue to maintain the capability of destroying each other, no matter which country makes the first strike. If one deploys an ABM system the other will do so, and will develop concurrently more effective and powerful offensive nuclear weapons, with such devices as MIRV, increasing over and over the number of warheads that can be targeted on their cities and peoples.

For myself, I cannot see that the installation of an ineffective system will provide any strength for negotiations with the Soviet Union on the reduction of the arms race. The critical situation in the Middle East, the tension in Europe following the invasion of Czechoslovakia, the war in Vietnam and other sources of danger to the United States and to the world call for a time of negotiations of which the President has spoken. I argue that these delicate balances—including the nuclear deterrent—should not be upset by the commencement of another kind of nuclear arms race. At least, we should not take this step until President Nixon and the new administration have every opportunity to search out the Soviet Union if there are ways to reduce, rather than accelerate, the arms race and to bring some hope of stability and true security to this endangered world.

Mr. President, a number of articles discussing the ABM have appeared recently. I ask unanimous consent that this article be included in the Record at the conclusion of my remarks.

There being no objections, the articles were ordered to be printed in the Record, as follows:

[From the New York Times, Feb. 2, 1969]
FOES OF ANTIMISSILE NET INCREASE IN SENATE
ATTACKS ON PENTAGON—KENNEDY JOINS
SENTINEL SYSTEM CRITICS AS OTHERS PLAN
INQUIRY INTO INFLUENCE OF THE MILITARY-
INDUSTRIAL COMPLEX

(By John W. Finney)

WASHINGTON, February 1.—The Defense Department is being caught in a pincer movement in the Senate. A bipartisan coalition threatening to block the deployment of a ballistic missile defense system and to investigate the influence of what former President Dwight D. Eisenhower called the "military-industrial complex."

Not since World War II has the Pentagon been so placed on the defensive on Capitol Hill.

It now appears that close to a majority of the Senate is opposed to the Sentinel antiballistic missile system, a five-year nationwide project designed to provide a "thin" shield against Chinese weapons by detecting approaching missiles with radar and intercepting them with nuclear-armed antimissile missiles. With the opposed to the Sentinel antiorganized, it is likely that the Senate will refuse later this year to vote further funds for the \$5-billion network.

POLITICAL FOLLY SEEN

Senator Edward M. Kennedy of Massachusetts, the Senate Democratic whip, openly joined the battle today with a letter to Defense Secretary Melvin R. Laird protesting that it would be political "folly" and a serious technical mistake for the United States to commit billions of dollars to build a yet unproved missile defense system.

In his first public statement on the issue, Senator Kennedy proposed that the Administration impose a freeze on the construction of sentinel sites while it conducts a National Security Council review into the desirability of deploying a missile defense system.

"Such a freeze," he said in a four-page letter, "would make a definite contribution to the cause of world peace, would reassure the nation that our national defense programs are sound and rational, and would heighten the possibility that we will be able to deal more effectively with our domestic needs."

Meanwhile, the Pentagon faces a broader attack on another flank by the Senate Foreign Relations Committee, which provided the hard core of resistance to the Sentinel system.

With considerable secrecy so as not to arouse the jurisdictional jealousies of the Senate Armed Services Committee, the Foreign Relations Committee is proposing to set up a special subcommittee to investigate the global and domestic activities of the Defense Department.

FOREIGN POLICY IMPACT

Ostensibly the subcommittee would look into the nation's global commitments and their impact upon foreign policy. But this mandate would be but a vehicle for investigating the impact and influence of the military establishment.

Thus the investigation would probably go into such issues as the command and control being exercised over military units, such as the Pueblo intelligence ship, indoctrination programs conducted by the Pentagon to educate the public on foreign policy issues, the political use made of military aid programs in underdeveloped countries, as in Latin American, and Pentagon sponsorship of non-military social science research.

The subcommittee probably would be headed by Senator Stuart Symington, Democrat of Missouri, a choice that illustrates the changing attitude in the Senate toward the Defense Department.

By seniority rights, Senator Symington, a former Secretary of the Air Force, should take over the chairmanship of the Senate Preparedness subcommittee, which is the principal defender of military programs.

But Senator John Stennis of Mississippi, chairman of the parent Armed Services Committee, will retain the helm over the influential subcommittee. So Senator Symington is likely to become chairman of a rival subcommittee that should develop into the principal critic of the Pentagon.

That Senate attitudes toward the Pentagon were changing became apparent last year when Senator John Sherman Cooper, Republican of Kentucky, led what amounted to a one-man battle against the Sentinel system. While the battle is still being led by Senator Cooper, the opposition this year is much better organized and has recruited such young activists as Senator Kennedy and Senator Charles H. Percy, Republican of Illinois.

FUTILE ASSAULTS

In his letter, Senator Kennedy argued that technically there was "no conclusive evidence" that the Sentinel system would work, he said that from a political standpoint the Sentinel system would "vitalize an unparalleled opportunity to lessen world tensions" through an economic standpoint such a system would be so costly as to cause "a distortion of Federal funding priorities."

Noting that there has been considerable discussion of the "peace dividend" that would

be made available with the end of the Vietnam war, he said:

"It is my opinion that we would do more to divide the country than unite it should we apply this dividend, whatever it may be, to deployment of an ABM system rather than to our domestic housing, employment, health, education, conservation and other needs."

In a series of futile assaults last year on the initial \$647-million installment for the Sentinel, Senator Cooper surprised the military establishment in the Senate by corraling 42 Senators to his side.

This year the Defense Department is requesting \$1.4-billion in deployment funds. As the request has grown, so also in the opinion of such Senators as Mike Mansfield of Montana, the majority leader, has the opposition mounted to the Sentinel.

Opponents of the Sentinel can now count on about 45 votes in the Senate, and with a few switches and recruits among freshman Senators they can command a majority.

Whether the opposition can win over the crucial few votes depends in large measure upon how emphatically the Nixon Administration comes out in favor of the Sentinel.

During his confirmation hearings earlier this month, Defense Secretary Melvin R. Laird said he had "some questions whether we should push forward simply with a system that defends against the Chinese threat only."

But then at a news conference this week, Mr. Laird, echoing the arguments of his predecessor, Clark M. Clifford, said the United States should proceed with the Sentinel system to strengthen its bargaining position in any missile-control negotiations with the Soviet Union.

THE LAIRD LOGIC

As far as the Sentinel opponents are concerned, this Laird logic plays into their hands, for it questions how the United States can improve its bargaining position against the Soviet Union by building a system whose effectiveness has not been established and which is designed against the Chinese, not the Russians.

Even for defense against Chinese missiles, the opposition has obtained intelligence, information challenging the value of the Sentinel. Thus, in intelligence briefings, Senator Cooper has obtained estimates that Communist China would be capable of producing in small quantity relatively sophisticated nuclear warheads, which, with the assistance of such penetration aids as decoys, would be capable of overcoming the Sentinel system.

As a result of last year's battle, the opposition has already won one important concession from the Senate military establishment which should help it prepare a case against the Sentinel.

Last year the Senate Armed Services Committee held routine hearings on the Sentinel, with only Pentagon officials testifying. This year, at the request of Senator Cooper, the committee has agreed to hear independent experts, giving the opposition the opportunity to present, for example, the testimony of former Presidential science advisers who have opposed deployment of an ABM system.

RESISTANCE BUILDING

The opposition should also be aided by another political factor, namely the local resistance building up in some communities that have been selected for Sentinel bases.

Until the Army started buying and clearing Sentinel sites, the debate was fought out on largely abstract terms. But now the debate is acquiring apolitical backlash as the Senators hear from constituents opposed to the location of a Sentinel base in their communities.

Senator Percy, for example, is receiving 750 to 1,000 letters a week from constituents opposed to a Sentinel site in the Chicago area. If Senator Percy is feeling such political pressure, so presumably is Senator Everett

McKinley Dirksen of Illinois, who as Senate Republican leader probably holds the key to the outcome of the Senate debate on the Sentinel system.

A question being asked in Senate circles is whether Senator Henry M. Jackson, Democrat of Washington, who is up for re-election in 1970, will be so ready to stand up as the principal Senate champion of the Sentinel system now that opposition is developing in Seattle to a proposed Sentinel site outside the city.

[From the New York Times, Jan. 30, 1969]
EXPERT FINDS UNITED STATES AND SOVIET IN ARMS SUFFICIENCY

(By Thomas P. Ronan)

Dr. George W. Rathjens, former director of the Systems Evaluation Division of the Institute for Defense Analysis, asserted in a report made public yesterday that the present strategic balance between the United States and the Soviet Union might be described as one of sufficiency in strategic forces.

He said he used the term in the sense that "each side can inflict unacceptable damage on the other, regardless of the conditions under which nuclear war might develop."

"Thus, further increases in strategic force levels are not likely to offer either country new political options," he added. "Yet on both sides there have been vigorous research and development programs that now make probable the deployment of new strategic systems."

FUTURE OF THE ARMS RACE

Dr. Rathjens, now visiting professor of political science at the Massachusetts Institute of Technology, gave his views in "The Future of the Strategic Arms Race: Options for the 1970's," a report prepared for the Carnegie Endowment for International Peace.

President Nixon, responding to a questioner who used the word "sufficiency" at his news conference Monday, said it applied to his Administration's approach to military preparedness.

He said his Administration's objective was "to be sure the United States has sufficient military power to defend our interests and to maintain the commitments which this Administration determines are in the interests of the United States around the world."

"I think sufficiency is a better term, actually, than either superiority or parity," Mr. Nixon added.

Dr. Rathjens, who has also served as special assistant to the director of the United States Arms Control and Disarmament Agency, said United States strategic forces had been built up rapidly during the early nineteen-sixties but their level had been almost constant during the last two years.

He said that Soviet strategic forces had recently been growing at a fast rate but that according to most measures of strategic strength, the United States continued to have superiority.

"Despite some uncertainty about the absolute levels of damage that each side might experience and about the recuperative ability of such damaged societies, there seems little reason to doubt that in a full-scale nuclear exchange at this time, the United States and the Soviet Union would suffer about equally and grievously," Dr. Rathjens asserted.

"The foundations of society in each country would certainly be destroyed."

[From the Washington Post, Feb. 2, 1969]
KENNEDY URGES FREEZE ON SITES FOR ANTI-MISSILES

(By Morton Mintz)

Sen. Edward M. Kennedy (D-Mass.) has urged the Nixon Administration to freeze construction of sites for the "thin" Sentinel anti-ballistic missile system—the controversial project proposed as a deterrent against China.

The Assistant Senate Majority Leader said

that a freeze would "make a definite contribution to the cause of world peace," reassure the Nation that its defense programs are "sound and rational" and expand the possibility of dealing "more effectively with our domestic needs."

Kennedy's plea was voiced in a letter mailed Friday to Defense Secretary Melvin R. Laird, who has said the ABM system is needed as a bargaining tool for possible disarmament talks with the Soviet Union.

In the meantime, Laird has ordered a review of the system and of the decisions to proceed with deployment. The review provides, Kennedy said, "yet another reason" for freezing site construction.

Kennedy's letter holds to his previously expressed position—against construction of the ABM system but in favor of research and development for it.

Last April 18, for example, Kennedy was paired in support of an amendment of Sen. John Sherman Cooper (R-Ky.) to delay deployment of the Sentinel. The amendment was defeated, 28 to 31. Last Oct. 2, Kennedy was in the minority again when a similar Cooper amendment was rejected, 25 to 45.

Kennedy's letter to Laird included these arguments for a freeze on Sentinel site construction:

Technical: There is "no conclusive evidence" the system will work in combat conditions:

Relations with the Russians: The choice might be a freeze and "an unparalleled opportunity to lessen's world tensions," or the possible "folly" of forcing the Soviets to continue with an ABM system of their own.

Site location: In Massachusetts and elsewhere, populated areas will be exposed to accidental ABM explosions and made "a prime target."

Cost: Although the Defense Department has estimated a "thin" system will cost \$5 billion, "all of us with experience in estimates for military systems expect this . . . figure to be low."

[From the Washington Post, Nov. 22, 1968]

FOES PICTURE ABM RISK TO DEFENDED CITY

(By George C. Willson)

The specter of a defending missile blowing up the city it is supposed to protect has been raised by scientists and law-makers trying to stop the construction of an American anti-ballistic-missile system.

This new tack in the campaign against the \$5 billion Sentinel ABM (anti-ballistic-missile) program showed up in Chicago yesterday and in the censored transcript of the secret Senate debate on the issue.

Five nuclear physicists from the Argonne National Laboratories southwest of Chicago have formed the West Suburban Concerted Scientists, committed to stop ABM construction in that city or its suburbs.

John Erskine, Argonne laboratory physicist, contends that if the long-range Spartan missile should accidentally explode, its one-megaton nuclear warhead would make "a crater 400 feet deep and three-fourths of a mile across."

The blast, he asserted, would send radioactive debris all around Chicago, killing "a large fraction of the population within 24 hours."

The Army is investigating five sites in the Chicago area for an ABM base as part of the "thin" missile defense President Johnson decided to build for the United States. Congress this year voted money for to start construction of the system, defeating several amendments to cut ABM funds out of military legislation.

Besides the accidental explosion argument, Dr. David R. Inglis, senior physicist at Argonne and former chairman of the Federation of American Scientists, said the ABM site in Chicago would make the city a military target for Soviet ICBMs. He is another

of the five physicists who have banded together in the stop the ABM effort.

Col. William Wray, chief of site operations for the Army's Sentinel command, told a briefing session in Chicago yesterday that there was little if any danger of an accidental explosion.

"Over the last 20 years of storage and handling of nuclear weapons," Wray said, "we have never had an accident."

Here in Washington, Sen. John Sherman Cooper (R-Ky.) has posed the accidental explosion question to the Pentagon in these words: "In view of public hesitation to accept nuclear reactors in cities, what assurance can be given that there is less hazard from accidental detonation of ABMs stationed in or on the edge of cities? In case of accident, how does the damage in the two cities compare?"

Sen. Clifford P. Case (R-N.J.), another opponent of the ABM, submitted that question on behalf of Cooper during the secret Senate debate Oct. 14. A sanitized transcript of that debate was published in the Congressional Record of Nov. 1.

Cooper hopes to pursue the danger of putting nuclear-tipped defensive missiles in or near cities in special Senate hearings early next year.

Chairman Richard B. Russell (D-Cal.) of the Senate Armed Services Committee, during the secret debate, contradicted the Johnson Administration's insistence that the thin ABM is to guard against an irrational attack by the Chinese.

"I am frank to say I consider" the missile defense now under construction "primarily the beginning of a system to protect the people of this country against a Soviet missile atomic attack."

Former Defense Secretary Robert S. McNamara, in announcing the go-ahead on Sentinel Sept. 18, 1967, said it would be foolish to go beyond the "thin" anti-Chinese defense by trying to protect the U.S. from Soviet missiles.

But the opposition to the ABM decision has insisted all along that Sentinel is just a building block.

Russell argued the ABM was worth buying for the lives it might save in a nuclear war between the superpowers.

Sen. Henry M. Jackson (D-Wash.), another advocate of the ABM, said the defense now under construction "will complicate any Soviet attack on the United States and thereby contribute to the deterrent."

Chairman J. W. Fulbright (D-Ark.) said during the secret debate that Russell's committee only listened to Administration witnesses on the ABM and did not call in scientists who opposed building the system.

Russell retorted that none of the scientists asked to testify before his Armed Services Committee nor did any Senators request them to appear.

[From the Washington Post, Jan. 26, 1969]

WEAPONS SYSTEMS: A STORY OF FAILURE

(By Bernard D. Nossiter)

The complex electronic gadgetry at the heart of new warplanes and missiles generally works only a fraction of the time that its builders had promised.

The performance of the multi-billion-dollar weapons systems started in the 1950s was bad; those of the 1960s are worse.

The Pentagon appears to be giving the highest profits to the poorer performers in the aerospace industry.

These are the conclusions of an abstruse 41-page paper now circulating in Government and academic circles. The document, a copy of which has been made available to The Washington Post, is believed to be the first systematic effort to measure how well or ill the Pentagon's expensive weapons perform.

Its author is a key Government official with access to secret data and responsibility

for examining the costs of the Pentagon's complex ventures. He and his agency cannot be identified here.

His paper, entitled "Improving the Acquisition Process for High Risk Military Electronics Systems," aims at bringing down the costs and bettering the dismal performance of weapons. It does not discuss a question that might occur to others: If these weapons behave so badly, why is the money being spent at all?

For security reasons, many of the planes and missiles examined are not identified by name.

The paper first examined 13 major aircraft and missile programs, all with "sophisticated" electronic systems, built for the Air Force and the Navy beginning in 1955, at a cost of \$40 billion.

Of the 13, only four, costing \$5 billion, could be relied upon to perform at more than 75 per cent of their specifications. Five others, costing \$13 billion, were rated as "poor" performers, breaking down 25 per cent more often than promised or worse. Two more systems, costing \$10 billion, were dropped within three years because of "low reliability." The last two, the B-70 bomber and the Skybolt missile, worked so badly they were canceled outright after an outlay of \$2 billion.

LOSES FURTHER LUSTER

The paper sums up: "Less than 40 per cent of the effort produced systems with acceptable electronic performance—an uninspiring record that loses further luster when cost overruns and schedule delays are also evaluated."

The paper measures "reliability" in this context: The electronic core of a modern plane or missile consists essentially of three devices. One is a computer that is supposed to improve the navigation and automatically control the fire of the vehicle's weapons and explosives. Another is a radar that spots enemy planes and targets. The third is a gyroscope that keeps the plane or missile on a steady course.

When the Pentagon buys a new gadget, its contract with the aerospace company calls for a specified "mean time between failure of the electronic system." In lay language, this is the average number of continuous hours that the systems will work.

In a hypothetical contract for a new jet bomber, Universal Avionics will sell the Air Force on its new de- * * * * * by promising that the three crucial electronic elements will operate continuously for at least 50 hours without a breakdown. In the reliability measures used in the paper described here, the plane is said to meet 100 per cent of the performance standards, if, in fact, its gadgetry did run 50 consecutive hours. However, if a key element breaks down every twelve and a half hours, it gets a rating of 25 per cent; every 25 hours, 50 per cent and so on. Should a system operate with a breakdown interval of 62.5 hours—a phenomenon that happens rarely—its reliability is rated at 125 per cent.

TEST FOR THE PILOT

Quite obviously, the more frequent the breakdown, the more the pilot of a plane has to rely on his wit and imagination, to navigate, find targets and fly a steady course. Over-frequent breakdowns in a missile can render it worthless as an instrument of destruction.

Curiously enough, as the paper demonstrates the Pentagon and the aerospace industry apparently learned little * * * systems of the 1960s are even worse.

The document first looks at the performance record of the electronic systems in 12 important programs begun in the 1950s. As the accompanying chart shows, all but four missiles can be identified by name without breaching security.

Of the 12, only five perform up to standard or better; one breaks down 25 per cent more frequently than promised; four fail twice as

often and two break down four times as frequently as the specifications allow.

The document discusses some of the good and bad performers in this group. It observes that the F-102, the Delta wing interceptor for the Air Defense Command, was bedeviled by an unsatisfactory fire control system. Its first had to be replaced; the next was also unsatisfactory, and an extensive, two-year program to modify the device was then undertaken.

SIDEWINDER DID WELL

In contrast, the Sidewinder, a heat sensing missile, performed very well. The study attributes this to the fact that the missile was developed in a leisurely fashion, without a "crash" schedule, and that several contractors were brought in to compete for key components.

The paper next examines eleven principal systems of the 1960s. These cannot be identified beyond a letter designation.

Thus, in the chart, A1 is the first version of a plane or missile; A2 is the second version, possibly one for a sister service; A3 is the third version and so on, B1 is the first version of an entirely different system; so are C1, D1 and E1.

To make the best possible case for the Pentagon and its contractors, this survey does not include two systems costing \$2 billion that performed so badly they were killed off. The eleven systems of the 1960s evaluated here account for more than half of those begun in the most recent decade and their electronic hearts cost well in excess of \$100 million each.

Of the eleven systems, only two perform to standard. One breaks down 25 per cent more rapidly than promised; two break down twice as fast and six, four times as fast.

As a group, the eleven average a breakdown more than twice as fast as the specifications demand. Oddly enough, the first version of the system designated as "A" met the standard. But the same unidentified contractor produced three succeeding versions that fail on the average more than three times as often as they should. All these successors, the papers observes, were ordered on a "pressure cooker" basis, on crash schedules.

HIGHEST REWARDS

The paper also examines the relationship between contractors' profits and performance, and suggests that, contrary to what might be expected, some of the most inefficient firms doing business with the Pentagon earn the highest rewards.

The second chart looks at profits, after-tax returns as a percentage of investment, the only valid basis for determining profitability, for the ten years from 1957 through 1966. During the decade, the aerospace firms managed to earn consistently more than American industry as a whole, piling up nine dollars (or billions of dollars) in profits for every eight garnered by companies not doing business with the Pentagon.

Even more peculiar is the brilliant earnings record of two of the biggest contractors, North American and General Dynamics. Both, except for a brief period when General Dynamics tried its hand at some civilian business, made profits far above the industrial average and generally in excess of their colleagues in aerospace.

During the ten years, North American did all but two per cent of its business with the Government. The study reports that it produced one highly successful plane in the mid-50s, another system that met performance specifications, one that was canceled and four that broke down four times as frequently as promised. Nevertheless, the company's profits were 40 per cent above those of the aerospace industry and 50 per cent above the average for all industries.

NONE MEASURES UP

General Dynamics had, as the chart shows, a much more uneven profits record. But its

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years of disaster and even losses were those when it ventured into the economically colder climate of the civilian world to produce a commercial jet airliner. Having learned its lesson, it retreated to the warmer regions of defense procurement and, in recent years, has netted more than the industry average. It has compiled this happy earnings score, the study observes, despite the fact that none of the seven weapons systems it built for the Pentagon "measured up to expectations." Its most notorious failure is the F-111 swing-wing fighter-bomber.

As a final touch, the study notes that complex electronic systems typically cost 200 to 300 per cent more than the Pentagon expects and generally are turned out two years later than promised. But both of these phenomena have been examined so frequently by specialists in the field that the paper does not dwell on them.

HOW MUCH PROTECTION?

These findings raise some serious questions. Perhaps the most important is how much protection the United States is getting for the tens of billions of dollars invested in expensive weaponry. Another is whether the whole process should be turned off and improvements made in the existing devices. Secretaries of Defense have repeatedly assured the Nation that present weaponry guarantees the destruction of any Nation that attacks the United States.

The document under study here, however, takes a different line, one aimed at getting less costly weapons that measure up to the promised performance.

It blames the dismal record on several factors. One is the relentless search for newer and more complicated electronic "systems." The aerospace contractor has an obvious vested interest in promoting "breakthrough" gadgetry. This is the way he gets new, and clearly profitable business.

CLOSE CORRELATION SHOWN

But the study asks, do the services need it? Since the Air Force and the Navy almost always accept a plane or a missile that performs at a fraction of its promised standard, it would appear from an exclusively military standpoint that a device of a much lower order of performance fits the Nation's defense needs.

The document also shows a close correlation between "crash" programs and poor performance. Thus, it proposes more realistic schedules. If a weapon is wanted in short order, five years or less, the study recommends that its electronic gadgetry be limited to familiar items.

If the Pentagon wants something that makes a "technical breakthrough," it should allow a minimum development period of five to seven years, it is pointed out.

Another factor in poor performance, the study says, is the absence of competition for new systems after the initial designs are accepted. Typically, the Pentagon requires five or so aerospace firms to bid on its original proposal. But typically, it selects one winner on the basis of blueprint papers. The study says that the military could save more money and get a better product if it financed two competitors to build prototypes after the design stage. Such a technique was followed, it recalls, with the F-4, a supersonic Navy interceptor. Even though the F-4 employed both a new radar and a new computer, it performed up to the promised standard.

At first glance, such a technique might seem like throwing good money after dubious dollars. But the study contends that if two aerospace competitors are forced to build and fly prototypes before they win the big prize—the contract to produce a series of planes or missiles—they will be under a genuine incentive to be efficient, hold costs down and make things that work.

[From the Detroit News, Feb. 1, 1969]

OAKLAND MISSILE SITES VERY MUCH HUSH-HUSH

(By Leonard Levitt)

The Army is shrouding its plan to construct two antiballistic missile sites in Oakland County in secrecy.

All outsiders were barred as top Army brass met behind closed doors, yesterday with the seven-member Oakland County Board of Supervisors planning, building and zoning committee.

Four sheriff's deputies patrolled the halls during the meeting.

Supervisor Niles E. Olson of Pontiac, described the meeting as "a briefing session over possible sites." Six sites have been proposed. Two will be chosen.

Olson, who had first been contacted about the meeting Wednesday night at his home, was informed only shortly before the session Friday afternoon that the press would be barred.

According to Olson, one of the three Army officers, Col. William Wray, of the Huntsville, Ala., missile center, said he was "under orders from his superiors in Washington not to speak to the press."

"He just won't continue the hearings if the press comes in," Olson said.

Asked why he was prevented from talking with the press, Wray merely smiled and shook his head.

Carl O'Brien, another Oakland Supervisor, complained after the meeting, "Anytime I asked them something important about the sites, they said it was classified."

The sites are part of a \$5.7 billion Sentinel antiballistic missile system to be constructed at 15 cities throughout the country.

Senator Philip Hart, Michigan Democrat, declared that the program must be stopped now "before it achieves a momentum of its own the way Vietnam did."

Hart made his charge Thursday night at Oakland Community College to a group of 200 women opposed to the missile sites.

"Huge military ventures, once underway, are very hard to shut down—even if it becomes apparent in midcourse that they are of questionable value," Hart said.

U.S. Rep. William S. Broomfield, a Republican whose Oakland County district contains the six sites, has opposed the plan because he says the sites would disrupt a rapidly growing area.

The decision on sites location was put off until mid-February by Clark Clifford, secretary of defense in the Johnson administration.

Broomfield and Rep. John Conyers Jr., Detroit Democrat, who also opposes the plan, had asked the Defense Department last December to defer the decision 60 days.

Mr. SYMINGTON. Mr. President, will the Senator yield?

Mr. COOPER. I yield to the Senator from Missouri.

Mr. SYMINGTON. Mr. President, unfortunately I cannot stay for this full discussion, but, as the able Senator from Kentucky will remember, at one time I stated that the figure could reach \$100 billion, if we went to a full system, a "thick" system, as it is called.

It is my understanding that already the estimated cost of the thin system has increased from \$5 billion to \$9.4 billion. Because of figures presented in a recent hearing before the Joint Economic Committee as to the average increase in cost of a number of weapons systems, I am not surprised.

May I ask the Senator if the thin system can double in cost within a few

months, is it not possible that the cost of the thick system could double within a few years?

Mr. COOPER. I think it is absolutely certain. The Senator has a great opportunity to study deeply these matters, and I am sure what he says is absolutely correct, that the cost will be twice as much as has been estimated within the last year. In addition, there are many statements in the defense budget presented this year which differ from those made last year about both the thin system and the heavy system, and about the progress of an ICBM system in China and an ABM system in Russia.

Mr. SYMINGTON. Mr. President, I thank the able Senator, and would make these additional observations:

Some people question this system on moral grounds, I do not.

Some people question it on the basis that it could start an additional arms race, and therefore increase our taxes. If the Federal budget increases in the next 6 years, at the rate it has over the past 6 years, the annual cost to the taxpayer of the Federal Government—not counting the tremendous additions in State and local government taxes—will be \$325 billion a year.

The basic reason I question this system is because I do not believe—and I have studied it to the best of my ability—that this system is yet ready for deployment.

The able Senator from Kentucky and I have never advocated throwing out the system. All we have asked is that it be further engineered before being cut into production. Based on the record, I still believe that was, and is, a wise suggestion.

I thank the Senator for yielding.

Mr. COOPER. I thank the Senator for the fight he has made to delay deployment. As he knows, many eminent authorities have said it is not yet technologically ready for deployment.

Mr. FULBRIGHT. Mr. President, will the Senator yield?

Mr. COOPER. I yield to the Senator from Arkansas.

Mr. FULBRIGHT. I associate myself with the comments of the Senator from Missouri. Last year, in the debate on this matter, I agreed with the Senator from Kentucky and supported his move to delay deployment of the system.

I ask him, has anything, so far as he knows, developed since that time to increase the effectiveness of the system? Have there been any hearings, or any facts developed, or has any knowledge come to the attention of the Senator from Kentucky that would suggest the system has become more effective? If not, I agree with the Senator from Missouri that there is great doubt about its effectiveness.

Mr. COOPER. Nothing has come to my knowledge that would reinforce the idea that it has become more effective.

Mr. FULBRIGHT. Have there been any outside scientists, that is, scientists not connected with or in the direct employ of the Pentagon, who have testified or given any indication that it is feasible?

Mr. COOPER. No, but many of them are making statements in writing that,

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first, they do not believe it is a system adequate to meet the threat from the U.S.S.R., and, second, they believe it would result in an arms race which would be very dangerous to the security of the United States.

I recall that last year during the debate the distinguished Senator from Arkansas, the chairman of the Committee on Foreign Relations, addressed a question to the distinguished Senator from Georgia (Mr. RUSSELL), the chairman of the Armed Services Committee, asking him if certain distinguished scientists, Nobel Prize winners in nuclear physics among them, had been called before the committee to give their judgment, which I would think would be independent judgment, about the feasibility of this system, and also about the consequences it might have as to deployment of a similar system by the Soviet Union.

I recall that Senator RUSSELL said they had not called such witnesses. I remember the Senator from Arkansas pressed both Senator RUSSELL and the Senator from Mississippi (Mr. STENNIS), who is present, as to whether or not such witnesses could be called at the next hearings; and I believe I am correct in saying that both our distinguished colleagues, Senator RUSSELL and Senator STENNIS, agreed that such witnesses would be called, and suggested that Senators who opposed the deployment of the system suggest names of witnesses, and that they would be called. I think the Senator recalls that.

Mr. FULBRIGHT. Yes, I do.

Mr. COOPER. That was the substance of the colloquy, and the record of that closed session was subsequently made public, so we can speak of it. It was the Senator's inquiry that produced the answer that those witnesses would be called.

Mr. FULBRIGHT. I might say that a further effect of that was that I had a letter from the president, I believe, of an association of scientists, the technical name of which I do not recall—I think the Senator is familiar with it—who stated that they would be willing and would like to be called to testify on this matter, that they did have very definite views about the feasibility of it.

May I ask the Senator what his information is as to how far the deployment of this system has progressed as of this time?

Mr. COOPER. I do not have any firm, recent information. I have read in the newspapers accounts of land acquisition activities in several parts of our country. I believe there are Senators who would know more about that than I. I am sure, if he can appropriately answer the question, that the chairman of the Armed Services Committee could reply to that question.

Mr. BROOKE. Mr. President, will the Senator yield for a response to the question?

Mr. COOPER. I yield.

Mr. BROOKE. The first such acquisition was in the Boston, Mass., vicinity, in the Lynnfield-Reading area. There has been protest locally, but construction is underway at this time.

Mr. FULBRIGHT. I think I read that there was some protest around the Chicago area about such acquisition, too.

Mr. COOPER. Yes; also in the State of Washington and the State of Hawaii.

Mr. FULBRIGHT. I ask one further question: Has the Senator any suggestion as to what might be done now, assuming that the sentiment of this body is more in favor of his position? Is there any resolution, or any means that the Senator has in mind, that would give us an opportunity, once again, to express our views about the matter?

Mr. COOPER. Well, of course, the most direct way would be, when hearings are held by the Armed Services Committee, to invite Senators to testify, and, to bring before that committee witnesses we can jointly suggest who were not heard before, such as the scientific advisers of former Presidents Eisenhower, Kennedy, and Johnson, and other distinguished scientists.

Another way we could reach the matter directly would be, when the bill or bills come before the Senate—I believe there are three—in which there will be funds itemized for deployment, then we could attack it by amendments on the floor.

Mr. FULBRIGHT. There is no further authorization necessary, as I understand it.

Mr. COOPER. Yes, authorization is required.

Mr. FULBRIGHT. What I should like to suggest to the Senator—

Mr. COOPER. I would be happy to have the distinguished Senator's suggestion.

Mr. FULBRIGHT. I suggest, in view of the fact that we have a new administration and we all, I am sure, wish to see it succeed, that I think it might be wise in view of the great differences of opinion on this matter, to suggest to the President that deployment, or actual construction, at least, be held up until there is an opportunity to test the present sentiment, as the Senator has suggested. As I understand him, he feels that there is no practical way for us to express ourselves except on an appropriation bill for further funds; is that correct?

Mr. COOPER. Well, that would be a direct way.

Mr. FULBRIGHT. Is there any other way?

Mr. COOPER. I would assume, if debate continues, that we can convey to President Nixon, our desires and belief that in connection with his review of policy, both defense and general policy, it would be wise to hold up the deployment of this system until he has had full information and, as I shall mention later, until he has found out whether it is possible to enter into negotiations with the Soviet Union on the questioning of the limitation of nuclear weapons—offensive and defensive. Some may suggest a resolution.

Mr. FULBRIGHT. I had hoped the Senator might suggest a resolution and had obtained sponsors for it. I had hoped to do it myself.

Mr. COOPER. We will discuss it. If the group that feels very strongly that it is the best route, we can do it.

I yield to the distinguished Senator from Mississippi, the chairman of the Armed Services Committee.

Mr. STENNIS. Mr. President, I thank

the Senator for yielding. I am not going to engage in a general debate or make a long statement.

Mr. COOPER. Mr. President, I am not going to go into details today.

Mr. STENNIS. I think it is time that I say something about procedures. There does have to be further authorization beyond the amount that was contained in last year's budget, which carries over into the selection of sites and some work, before the program can proceed.

There will be hearings on this matter before any appreciable amount of physical work is done on the site. A great deal of the money contained in last year's budget was for a continuation of development, which is the stage that precedes deployment.

I might give for information the figures that I looked up. The budget, as submitted by the retiring President, carries a request for this year, fiscal year 1970, of \$1.7 billion for the Sentinel alone and something in the neighborhood of \$2 billion for the entire ABM program.

Even though this is the forum in which to discuss these matters—and everyone is certainly within his rights and privileges to do so—I point out that we have a new President of the United States. We have a new Secretary of the Department of Defense and a new Deputy Secretary of the Department of Defense. We have a new Director of the Budget.

I know that all of those people, with the exception of the President, are now delving into this matter with all the speed they can employ with the facilities they have at hand. When they complete their work, the President will then be presented with their findings. The President will then make a decision. That would be the new budget.

Here are the very top men in the executive branch of the Government. They carry the primary responsibility of taking the first step. We have a responsibility just as important, if not more so. That is the initial step.

These men will proceed with their preparation and will try to grasp all the major parts of the program. I know that to be a fact. They have got to weigh—and I will not take much time—the complexities of the military threat. They have got to weigh the technological question of whether any effective system can be built.

I do not know whether it can be built. I said here on the floor of the Senate last year that we should not put all of our money in this endeavor. I do not know whether it will be effective or not. This is a delicate matter, as we all know. It involves our relations with the Soviet Union and the possibility of further constructive talks on arms limitations.

I happen to believe that we will not strengthen our position by pulling back here at this point merely because of the talks.

I am not accusing them of any bad faith. However, if we withhold this matter for a year or for 2 years—and I hear the suggestion made that we withhold everything for a year—we may then find that they are not acting in good faith in the talks, because they could talk for a year or for 2 years and be building up that much more.

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I want to know as much as there is to be known about the matter. Of course, I want the Senator to fully share that responsibility. However, I say with great deference, let us not rush. Let us hear these men that have to pass on the matter. With great deference I say to the public, let us not reach definite conclusions now.

So far as the hearings are concerned, as we know, this is a subject that could be heard ad infinitum. However, certainly I do not want to have anything to do with bringing in a bill containing an item as large as this until I have heard more about the matter and until the Senate has had a chance to know and hear more about it. Of course, many of these hearings have to be held in a closed session. However, there are ways of getting the information for the Senators. We can make a skeleton report and that report can be supplemented. I do not want to say that I favor conducting hearings ad infinitum. However, certainly I want the viewpoints of the different competent people in the Government and out of the Government.

I have told the staff that I am not going to pass on this matter, on my own part, solely on the testimony of Government witnesses, even though they are very fine, capable, and knowledgeable.

I think I have given the picture as I see it and as most of the members of the committee which has responsibility for this matter see it.

Mr. COOPER. Mr. President, I thank the Senator. He has done exactly what we believed and knew he would do. We know the Senator. We are reassured when the Senator says that the new President and new Secretary of Defense are reviewing all of these policies.

This effort of ours will be continued. Our effort is not designed to hurt the new administration in any way. It is designed to give to the new President and his administration such light as we may shed on the matter by expressing our opinions and viewpoints as Members of the Senate, and sharing our information with him and his administration.

I think that is part of the proper process of the Senate. I know that the Senator will agree.

Mr. STENNIS. Mr. President, I thank the Senator very much. I am conscious of the financial implications and complications of this matter. I am greatly concerned about it. I am not overlooking that factor.

Mr. FULBRIGHT. Mr. President, I am very glad that the Senator from Mississippi said what he did about the hearings. I thought it was significant that he said we want to get the whole picture and hear from people who are not in the Government and get a complete picture on a matter of this importance. It will certainly make all of us feel much better about it, if that is done.

Mr. STENNIS. Mr. President, all of us want to hear from those in and out of the Government and to hear what the President has to say.

Mr. PERCY. Mr. President, will the Senator yield?

Mr. COOPER. I yield.

Mr. PERCY. Mr. President, I thank the Senator for yielding to me, as I must

address the Senate Youth Forum in a few minutes.

I do not know of any subject that will affect the future leaders of America—the young people who are studying the process of the government here—more than the decision Congress and this administration must make on this very question.

I commend the Senator from Mississippi who heads the Armed Services Committee for the very openminded approach he has taken and for his willingness to hear all sides of this issue and to recognize that even with his own deep knowledge of this subject—having studied it thoroughly—it is a highly complex question. It is not merely a question of making a judgment on a simple matter. This matter affects our military posture, and it affects our Committee on Foreign Relations, since one of the basic questions we have to consider is whether the Soviet Union wants to sit down and negotiate now.

It would be foolhardy for us to proceed with the construction of this system if there were a chance to negotiate an agreement whereby both sides would have a common interest in not proceeding with this kind of expenditure.

We must ask ourselves if we can reach an agreement in this field and find a way to enforce that agreement so that we may be absolutely certain that it will be adhered to.

From my own study of the subject—and I am putting as much time on this subject as on any subject we will be confronted with this year—I think it is possible to find a safeguard by which we will have the possibility of protecting the sanctity of an agreement made in this area.

It is not possible to deploy these systems without being subject to detection by satellite reconnaissance.

And we should ask ourselves what the real cost of the construction would be. If the cost has already escalated from \$5 to \$9.4 billion for the thin system, we should ask ourselves what it will cost to maintain the system.

Roughly, a system of this type would require an expenditure of approximately 10 percent per year for maintenance alone. Therefore, we are talking about a cost of \$1 billion every year just for maintenance of the thin system. If we proceed with a thick system, we are talking about saddling our young people, even if we pay the whole hundred billion dollars in our generation, with a \$10 billion maintenance cost per year.

Then, what do you do with an obsolete system of this magnitude and size? If your aircraft become obsolete, you can sell them; you can find some use for them. But what is the spinoff used for on an obsolete ABM system? Whom could you get to buy it? What part of it could you use? It would be almost entirely waste.

I can only ask, What does it really add to our national security, or does it detract from our national security? What does it really require our adversaries to do? What is it going to do in escalating the arms race? What actions are we likely to precipitate? Are we go-

ing to strengthen the hand of the hawks in the Kremlin and in the other capitals of the world by this action, by saying "there is no answer but any eye for an eye and a tooth for a tooth?"

I believe that the distinguished Senator from Kentucky, in his leadership—and we have excellent bipartisan leadership—has opened that inquiry. The Committee on Armed Services is willing to study it. I am certain the members of the Committee on Foreign Relations will give it earnest thought.

We are on the brink of a decision the magnitude of which can only be compared with, say, the Vietnam war, in total dollar cost. Before we proceed with this system, we had better know the consequences of it, and what we are doing.

I commend the Senator from Kentucky.

Mr. COOPER. I know the work that the Senator from Illinois has been doing, and he has expressed the chief concern well.

Mr. President, several Senators are waiting to speak, and I promised to yield to them in this order: The Senator from South Dakota (Mr. MCGOVERN), the Senator from Massachusetts (Mr. BROOKE), the Senator from Montana (Mr. MANSFIELD), the Senator from New York (Mr. JAVITS), and the Senator from Massachusetts (Mr. KENNEDY).

Mr. JAVITS. Mr. President, will the Senator yield to me at this time?

Mr. COOPER. I yield.

Mr. JAVITS. Mr. President, I should like to identify myself with the Senator's position and to say that the missing link is the political and the diplomatic aspect of this matter.

I join the Senator from Kentucky, and I hope he will propose a resolution asking the President now to put a freeze on this matter and to take another hard look at it. Let us do it in the Committee on Foreign Relations and the Committee on Armed Services. Let the President do it, himself, and with the National Security Council.

There is too much at stake and there is all the more reason for taking another hard look, even if it takes another 30 or 45 days. The world will not be lost or won in that period of time.

I hope the Senator will do that in asking the President to take that position.

I commend my colleague, the Senator from Kentucky, for his leadership and his foresight in again bringing to the attention of the Senate the grave issues connected with the question of an ABM defense system, and for the able way he has marshalled the arguments against proceeding with the deployment of the Sentinel system. I share his view that it would be a mistake to go ahead with the Sentinel system. We all know that we are talking about something much vaster than a "thin" defense against a hypothetical Chinese Communist nuclear threat in the mid-1970's.

While President Nixon has demonstrated an acute sensitivity to the grave, complex, and far-reaching nature of the whole issue of the nuclear arms race, much confusion and discord surround the whole question of the Sentinel ABM system. Indeed, it has become the focal point

of a major national debate over the highest issues of national security and, even, of the very nature of our society in the decades ahead. Most recently, in his press conference of January 27, President Nixon did much to clear up the needless semantic confusion and divisiveness which had been generated around the competing concepts of "superiority" and "parity." His adoption of the concept of "sufficiency" is, in my judgment, the choice of the best frame of reference for the historic debate now going on.

To be quite frank, it is far from clear just what the Sentinel system is supposed to do—and there is much dispute as to whether it can do any of the various things that have been suggested in differing quarters as to its mission. After vigorously arguing against a system oriented against any attack from the U.S.S.R., former Secretary McNamara originally justified deployment of the Sentinel system as a defense against a projected Chinese nuclear capability in the mid-1970's. However, subsequent statements by the distinguished former and present chairmen of the Senate Armed Services Committee—as well as statements from Pentagon authorities—have been to the effect that the Sentinel ABM is now to be regarded as the first building block in a "thick" ABM system oriented against an attack from the Soviet Union. Moreover, Secretary Laird has indicated that the Sentinel is now viewed as a major bargaining factor in the upcoming negotiations with the Soviet Union over limitation of the strategic nuclear arms race.

President Nixon has made clear his intention to review some of the major policy decisions of the last administration, particularly where there is some prima facie evidence to indicate that there are substantial reasons against the course decided upon. I urge the President to consider ordering a halt to all further actions directly connected with the Sentinel deployment decision based on his own review of the decision to deploy the Sentinel ABM system pending the outcome of a thorough review of the entire issue by the National Security Council. I have specifically limited my call for a suspension of further activity with respect to the Sentinel system to actions directly connected with deployment. I believe that research and development activities in the ABM field should be vigorously pursued.

To parallel a review of the whole complex of issues surrounding the ABM question by the National Security Council, I believe that the Senate also should conduct a thorough public investigation and review of the entire question. While the technical justifications in favor of the deployment of the Sentinel, from the viewpoint of the Joint Chiefs of Staff, has been well probed in hearings held by the Armed Services Committee and its Preparedness Investigating Subcommittee, I do not think that the broad political and diplomatic ramifications of this whole issue have been investigated as they need to be.

Major political and diplomatic questions involved in the ABM question are: The whole complex of our relationships with the Soviet Union; with Communist

China; with our NATO allies in Europe; with Japan and our other Asian allies; with Canada; and with our Latin neighbors to the south. In addition, the relationship of the ABM question to the Nuclear Nonproliferation Treaty, has not, in my judgment, been satisfactorily explored.

Finally, and by no means least, I believe it is essential for the Senate to take a systematic and thorough look at the whole question of projected costs for nuclear weapons systems in the next decade. The figures that have been projected in this regard by various, informed nonofficial sources truly boggle the mind. If these projections have validity, it is clear that the United States is going to have to make some of the most excruciating decisions on resources allocation in the years just ahead. At stake, ultimately, are the basic questions of just what kind of society we wish to become in the last third of the 20th century. It is clear in my mind that we just will not be able to finance all of the weapons systems which our Military Establishment feels it should have and still be able to meet even the minimum needs of our urban population in the explosive decade ahead.

Very hard choices are going to have to be made. The quality of life in America is the basic underlying issue and this must be borne in mind as we face the 1970's. We can either stagger and lurch from one ad hoc decision to another, or we can take a coherent look at the whole mix of competing demands and make our decisions calmly and judiciously. Above all, we must make our decisions affecting the future with an eye toward the nature and possibilities of the future rather than upon backward-looking decisions based wholly on our experiences of the 1940's and 1950's.

The question of cost and resources allocation, of course, is not merely one of "defense spending" versus domestic civilian needs. At issue is our posture in the world—the effectiveness of our interaction with 3 billion non-Americans—who will share this planet with us in the next decades. Are we to be the Sparta of the 1970's and 1980's? Is there not a higher role for America?

Mr. COOPER. I certainly value the Senator's advice, and we will consider this.

I now yield to the Senator from South Dakota.

Mr. McGOVERN. Mr. President, I shall not repeat the arguments that I know the Senator from Kentucky will make in calling for a delay in the deployment of this system. It seems to me that one of the most confusing aspects of the whole issue is the changing justification for this system advanced by the proponents.

Before the Senator from Mississippi, the distinguished chairman of the Committee on Armed Services, left the floor, I raised a question with him, which he said his committee would go into very thoroughly. I am sure they will do so, and I hope we can do it on the floor of the Senate as this discussion continues over the next few days.

The question is this, Are we proposing to build this system primarily as a de-

fense against China, or as a bargaining weapon with the Soviet Union, as enunciated by the Secretary of Defense a few days ago? The previous Secretary of Defense said that it was folly to try to deploy a thin system against the Soviet Union and that he would justify it only on the ground that it would provide us some temporary protection against the Chinese. That being the case, why, then, do we talk about backing away from this system if we can get some kind of agreement with the Soviet Union?

It does not make any sense at all to argue that we need this system against China, and then to say we would give it away, provided the Russians will not build one. Obviously, there is a very clear contradiction and confusion of justification for the system. Are we building it against China, against Russia, or against both? What is our strategy? What is the real rationalization for this system? Or, is it just an exercise in spending more money on military gadgets that add nothing to our security against either the Russians or the Chinese, and which may, in fact, aggravate our relations with those countries?

Those are the kinds of questions, among others, that I hope will be explored on the floor of the Senate and explored even more in depth by the Committee on Armed Services.

Mr. PELL. Mr. President, will the Senator yield?

Mr. McGOVERN. I do not have the floor.

Mr. COOPER. I promised to yield in rotation, because Senators must leave, but I will yield to the Senator from Rhode Island.

Mr. PELL. I ask this question: Would not the answer to the question of the Senator from South Dakota be shown by the projected site of a Sentinel missile in Reading, Mass., which would indicate they are more concerned with weapons of the Soviet Union than of China, just by looking at the globe?

Mr. McGOVERN. I do not know. The chairman of the Committee on Armed Services frankly said he was not prepared to answer that question at this point, that he wanted more time to look into it.

But it does seem to me one of the real reasons why there is so much confusion about it—we get a different explanation for the reason for justifying this system every time the argument comes up.

I believe the proponents of the system owe us a clear statement of why they want this system built and against whom it is to protect us.

Would we give it away if we could get arms agreements with the Soviet Union, or would we have to have some agreement with the Chinese? If we do not need any understanding with the Chinese, what is the purpose of the deployment of the system?

I believe these questions should be answered before we spend any more money acquiring sites and deploying a system that we may agree to give away a little later, pending some arms agreement with Moscow.

Mr. President, I am convinced that we will someday rue the phrase "negotiate

from strength" as one of the most damaging and costly cliches in the American vocabulary.

It has been employed heavily over the past several years as a concentrated expression of the reasons why we had to invest more lives in the thousands and more treasures in the billions before negotiations in Vietnam would be possible.

Now we are told that in order to "negotiate from strength" in arms talks with the Soviet Union, we have to begin deploying a \$50 or \$100 billion security illusion.

It is an encouraging development in our discussions over the ABM that we are beginning to face honestly the rationale behind the 1967 deployment decision. The original suggestion that it was oriented against China—requiring that we envision the Chinese, with a comparably tiny contingent of deliverable nuclear weapons, launching a futile attack which would lead to the total destruction of their society—was really too tenuous to be taken seriously. Americans believe a lot of things about the Chinese, but we do not equate them with idiocy. Moreover, this line of reasoning posed the difficulty of explaining why we were willing to eliminate our ostensible protection against the Chinese provided the Russians would agree not to built an ABM system.

So now we can see the Sentinel system as it is—the beginning of a much more elaborate and costly missile defense directed against a Soviet attack. And our debate can center on the question whether it has any value in that respect.

It seems quite appropriate to recall in this connection the warning issued by Secretary of Defense McNamara when he announced the "marginal" reasons for deploying a China-oriented system. He said in September of 1967 that—

The danger in deploying this relatively light and reliable Chinese-oriented ABM system is going to be that pressures will develop to expand it into a heavy Soviet-oriented system.

We must resist that temptation firmly—not because we can for a moment afford to relax our vigilance against a possible Soviet first strike—but precisely because our greatest deterrent against such a strike is not a massive, costly but highly penetrable ABM shield, but rather a fully credible offensive assured destruction capability.

The so-called heavy ABM shield—at the present state of technology—would in effect be no adequate shield at all against Soviet attack, but rather a strong inducement for the Soviets to vastly increase their own offensive forces. That, as I have pointed out, would make it necessary for us to respond in turn—and so the arms race would rush hopelessly on to no sensible purpose on either side.

Secretary McNamara referred in that statement to the ease of developing penetration aids—decoys and other devices—which an adversary with a relatively high degree of technical sophistication could employ to fool the Sentinel system. He also referred to the most simple method of neutralizing it; sending more offensive missiles than there are defensive missiles to intercept them. It is important to note in this respect that if only one offensive missile gets through

the defensive shield it has been a failure in terms of that target.

We have heard the argument, however, that even if that target is destroyed the defensive system will have succeeded in one respect because it will have diverted offensive missiles from other potential targets. Such reasoning ignores the fact that since 1958, when the Soviets developed ICBM's, we have been engaged in a weapons race in which each side seeks to maintain an "assured destruction capability" sufficient to deter the other from launching a first strike. Both the United States and the Soviet Union have sought to accumulate enough weapons to survive a first strike and still inflict an unacceptable level of damage on the other side. The assumption that this action-reaction cycle will cease with our deployment of the ABM is totally unwarranted. In fact, I can conceive of no rationale for assuming anything but that the ABM will have exactly the opposite effect.

It will stimulate the Soviet Union to increase its offensive capability enough to overcome the Sentinel and still destroy the targets it deems important.

But the discussion is made even more complex, and it is infused with additional risk, by the fact that these strategic considerations operate on the assumption that the Sentinel will work with a substantial degree of efficiency, an assurance which simply cannot be given.

It is, in fact, quite probable that during a heavy attack the effectiveness of an ABM system would drop to near zero. The Sentinel is, to be sure, a substantial improvement over the Nike-Zeus, with strengthened ability to discern between trash and nuclear warheads, higher-powered radars, and a significant change from neutron heating to X-ray kill which will make the defensive explosion effective at greater distances from the incoming warhead.

But we have not overcome, and I do not believe that we can overcome with a system in which some missiles intercept others, the problem posed by ionization of the atmosphere resulting from a nuclear explosion. In a heavy attack, if we were able to intercept a portion of the first wave of missiles, the explosions would upset the gas in the air and would create a shield impenetrable by radar. The tracking systems on which the ABM relies so heavily would be rendered useless.

This and other problems severely challenge the premise that the Sentinel would, in fact, save a significant number of American lives, even if we could assume that the Soviet Union would not respond by sending more offensive missiles. The Maginot line analogy is not at all unreasonable.

But our knowledge of the technical problems associated with the Sentinel adds another critical element to this discussion, for while we can operate with some fair understanding of its weaknesses our adversaries are likely to be overly generous in their assessment. Working from the inherent tendency to "underrate" your own weapons and to "overrate" those of the opposition, they are likely to overrespond, and to deploy enough offensive missiles to penetrate a

100 percent effective ABM. As a consequence, after we have reached the next plateau in the arms race, the probability is that more Americans, instead of less, would be destroyed in a nuclear exchange than is presently the case.

In light of these considerations I believe we can draw two conclusions about the ABM. The first is that its deployment would be a serious waste of our resources, akin to the waste which the Soviet Union committed—and is apparently recognizing now—when it began to deploy the limited Galosh defensive system around Moscow.

The second is that the Sentinel would further aggravate the arms race cycle which both we and the Soviet Union are seeking to escape, in the mutual realization that rational human beings ought to avoid both its dangers and its terrific costs.

Mr. President, the new administration has an opportunity to set a new and much more hopeful course. It will have made a highly significant contribution if it will but delay deployment of the ABM while two possibilities are explored—the prospects for reaching agreements with the Soviet Union on mutual limitations, and the potential of developing an anti-ballistic-missile system which would be effective and useful.

We have had discouraging signals that the administration may move in the opposite direction. Secretary Laird indicated at his press conference last week that he views the Sentinel as a bargaining tool, and that he believes it should be deployed as such—so we can "negotiate from strength."

I firmly challenge that assertion. I suggest that all we will prove by deployment is that we are willing to waste \$5 to \$10 billion or more on an unworkable device, and I fail to see how that can help us in negotiations.

Moreover, even if we concede that the Sentinel may have some value as a bargaining tool, what possible sense can there be in deploying it when we are seeking an agreement not to deploy?

If the negotiations were successful, we would be left with a useless system which would have to be torn out to comply with an agreement. Secretary Laird's assessment would, as I see it, have us in a position similar to that of a bargainer who offers to stop pinching himself so his cries of pain will stop disturbing the other party.

But certainly much more than cost is involved here. I am convinced that moving ahead with the ABM will greatly reduce the likelihood that an arms control agreement which is acceptable to both the United States and the Soviet Union can be found. I think it is time we recognize that they are not going to accept stabilization in a situation where we can inflict unacceptable damage upon them in a second strike but they cannot do the same.

Soviet leaders have made their interest in arms control talks quite clear, beginning with an invitation on inauguration day. And Peking has also indicated its desire to renew talks with us at Warsaw. Certainly we have no way of knowing in detail what the full intentions are of either the Russians or the

Chinese. But if we respond by provoking another round in the arms race on the premise of "negotiating from strength" we will have committed a serious error which may be impossible to reverse before we reach a higher level of weapons and a higher level of risk.

These are questions which I hope President Nixon and his advisers are evaluating with great care. The Congress, whose responsibilities in the field of national security, defense and arms control are no less weighty, should be considering them as well. The distinguished chairman of the Armed Services Committee, Mr. STENNIS, is to be commended for his willingness to broaden this year's committee hearings on the subject, to include a measure of the technical expertise which has aligned in opposition to the ABM and which we can only allude to on the Senate floor. These will be urgently important hearings.

Mr. President, Department of Defense appropriations for fiscal 1969 included \$614.7 million for deployment of the Sentinel. If we can use former Secretary Clifford's posture statement as a guide the ante will more than double in fiscal 1970, to about \$1,453 million exclusive of research and development.

The opportunity to hold up deployment is to avoid wasting that amount. For each year we go ahead the waste and the danger will increase.

Let us get off this hopeless path now. To stay on it is to pursue an illusion which will forever elude our grasp.

Mr. COOPER. The Senator has asked very searching questions.

We are all very pleased with the statement of the chairman of the Committee on Armed Services, the Senator from Mississippi (Mr. STENNIS), and it is one we would expect from him. He intends to see that this question is thoroughly reviewed.

The questions of the Senator from South Dakota do need to be answered.

Mr. President, I yield to the Senator from Massachusetts.

Mr. BROOKE. Mr. President, I thank the distinguished Senator from Kentucky. I wish to associate myself with the purpose of his remarks today. I was privileged to support him in his attempts to delay the deployment of this ABM system in the last session of Congress.

This morning I was at the Pentagon, and I asked about the cost of this thin system. The figure that was given me, as late as approximately 10 o'clock this morning, was \$5.8 billion. I was rather surprised, then, to hear the distinguished Senator from Missouri give a figure this afternoon of \$9.4 billion, which would be an extraordinary increase in such a short period of time.

I think there are certain questions that must be carefully considered before so costly a system is deployed. Of course, one question is the effectiveness of the system. I think that no evidence has really been supplied by any scientists which would indicate that this system can be effective. The Pentagon itself said the system is designed to defend against the potential of Communist China in the next decade. They admit it will not give us defense against the Soviet Union.

The second question pertains to the

potential arms race with the Soviet Union. I read the report of the Senator from Rhode Island (Mr. PELL) and the Senator from Tennessee (Mr. GORE), when they returned from their mission to the Soviet Union. One of the passages in that report stated that in conversations with Premier Kosygin, the Premier indicated he was anxious to enter into talks for mutual disarmament.

I took great heart from that passage, and I think many people took great heart that perhaps we were entering a period in which we could begin to talk about mutual disarmament, and thereby avoid another arms race with the Soviet Union.

So I explored the possibility that the Soviet Union had responded to our thin antiballistic-missile system and had begun to build a more sophisticated system themselves. I found there is no evidence that the Soviets responded at all or that Communist China responded at all. It would seem to me the only reaction we have had is a desire on their part to talk about mutual disarmament.

Certainly we all want to bring about peace in the world and we do not want to do anything that would trigger another arms race with the Soviet Union or even Communist China for that matter.

We have had a very serious problem in Reading and in Lynnfield in the Commonwealth of Massachusetts. The residents of those areas have been up in arms about the construction of a missile site right within their neighborhoods. I have been deeply concerned about it and after we failed in the last session of Congress to delay the deployment of this system, I hoped to have the site located, for instance, at Westover Air Force Base, which is in the western part of our State. But the engineers said there were too many mountains between the densely populated area of Boston and Westover Field. I pursued this matter this morning in the Pentagon, with respect to the fact that these sites will be built in densely populated areas because they are designed to protect densely populated areas. Further interrogation indicated they had made certain concessions in some of these sites, perhaps at Lynnfield, perhaps in Chicago, and other places across the country, which might mean there would be a buffer zone or landscaping to make the sites as palatable as possible if the people knew they had no alternative and that the installation could be constructed.

I asked if the costs of these modifications were included in the projected costs of the system. It would appear they are not. We do not know how much the costs will be. As the distinguished Senator from Missouri (Mr. SYMINGTON) indicated on the floor of the Senate today we do not even know what the costs are likely to be in 1972 or 1974, when this system is to be completed, because we know that costs are ever rising. And, worst of all, even when completed we do not know that the system will not be obsolete. As the Senator from Illinois (Mr. PERCY) pointed out we might have a system on our hands which will really be of no value to the Government.

I think the Senator from Kentucky has certainly raised an important question. I serve now on the Committee on

Armed Services. I am sure the Senator from Mississippi (Mr. STENNIS), our chairman, will see to it that we do have hearings. I think the purpose of this colloquy, to bring this matter to the attention of the new administration and the Congress, is a laudable one. I think it makes known to them that there are Members of this body who feel very strongly that there should be a reappraisal and an in-depth review, and that there should be a possible reconsideration before we continue to vote more money for the year 1969-70, as is proposed. So there is a definite remedy which is available to us and this is not just a futile exercise in colloquy.

I think this colloquy can serve a very useful purpose in perhaps delaying the matter until we can explore the possibility of mutual disarmament with the Soviet Union. If we are to take the word of the Senator from Tennessee (Mr. GORE) and the Senator from Rhode Island (Mr. PELL), as reported to us, there is some possibility that an agreement may be possible. But in the interim period what are we really losing if we admit the system will not protect us against a Communist threat?

I think the Senator from Rhode (Mr. PELL) raised a very serious question when he asked: If we are saying this system is designed to protect us against Communist China, why did we first choose Boston, Mass., to build the first site of installation? Communist China is not in that direction. Why did we not build it out in Seattle, Wash., or some other place on the west coast? Why did we choose the Northeast as the site of the first installation?

Of course, we are happy that the people of Massachusetts and the Northeast are being protected, but we are also concerned about the people on the west coast. I suggest that this installation might be pointed in the wrong direction if, in fact, our primary purpose is a defense against the Communist Chinese capability.

In conclusion I must add, upon interrogation also, was the purpose merely to build this thin system to protect us against the Communist Chinese, or was this system designed as the first phase of a larger and more sophisticated system that is to come in the future? The answer would appear to be that it is still designed as a defense against the Chinese capability, but it is designed so it can be broadened into a more sophisticated system which ultimately would give us a defense against the Soviet capability.

So these are the important questions I respectfully suggest have to be answered. And they are questions that I am sure will come out before the Committee on Armed Services and perhaps the Committee on Foreign Relations.

Those of us who have consistently opposed the installation of this complex and dubious defensive system have done so for a combination of reasons. They can, I believe, be summed up in the single conclusion that these costly facilities would in fact contribute very little to the security of the United States.

I would like to dwell briefly on the central reason why I believe this conclusion is justified. The system which has been

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proposed and for which initial site acquisition has begun is designed to protect the United States against a likely Chinese nuclear capability in the coming decade. No knowledgeable authority claims that we could now construct a really effective defense against the far greater Soviet missile threat, although the planned system would provide some defense against an accidental launching by the Soviets and might form the basis for a more elaborate ABM at a later date.

But we cannot focus exclusively on the potential benefits this system might offer vis-à-vis a Chinese threat, for that is but a small part of our national security problem. It is precisely in its likely impact on the strategic relations between the Soviets and the Americans that the so-called thin ABM is more dangerous than defensive. Why is that so?

I believe it is as certain as anything can be in international politics that any such deployment by either great power will oblige the other to increase its offensive forces, either quantitatively, qualitatively, or both. An American or a Soviet ABM system surely will increase the risks of a continued arms race with unknowable consequences for strategic stability and world peace. It is here that the gravest long term dangers lie and, if we are truly to serve our country's interests, I believe we must never lose sight of these concerns. The apparent Soviet decision to slow down or abandon their initial ABM deployment suggests that Moscow is also aware of these considerations.

At the moment the Soviet Union has renewed its expressions of interest in bilateral talks about possible strategic arms limitations. It would be tragic indeed if, at the very time when some possibility emerged of a serious negotiation to curb the arms race, the United States were to barge ahead with an ABM system heedless of its implications for these vital discussions. It has been argued that we should proceed on this system in order to gain leverage in the negotiations. It is my opinion that a vigorous research and development program, looking toward possible deployment if the talks fail, provide sufficient leverage at far less cost and with substantially less provocation than a present deployment.

In short I think our primary responsibility is to attend to the central issues in the strategic relationship between the Soviet Union and the United States. I would contend that we can serve this goal best by prompt ratification of the nonproliferation treaty and by immediate efforts to begin concrete negotiations with the Soviets on limiting missile forces.

This view is strengthened by the fact that a new administration has now taken office with fresh opportunities to explore the possibilities of mutual restraint by the great powers. It is further strengthened by the fact that the Chinese strategic capability seems to have evolved rather more slowly than initially projected; this should provide additional time for us to press forward with the arms control effort before making a large and possibly open-ended commitment to antiballistic-missile defense. We should make

exhaustive efforts in this direction, including efforts to bring the Chinese into a reasonable international security system, before we fall back upon the primitive and unreliable mechanism of competition in deadly arms, a mechanism which subsists only by fear and succeeds only by chance.

These international considerations are, of course, not the only ones we must take into account. The fact is that, in the domestic turbulence of our time, we have gained a new sense of urgency about the pressing needs here at home. The billions of dollars that would be required for even a minimal ABM deployment could doubtless find constructive and vital use for the well-being of our society. Our cities, our schools, our disadvantaged youth and impoverished adults—these have a paramount claim upon our resources. We cannot fail to confront the issue of whether the billions at stake can rightly go to a questionable defensive system when so many millions of our people are in dire need. The question of priority will not down—and I, for one, would resolve it in favor of investment in our critical domestic programs.

In arguing against the present investment in ABM, I feel it is incumbent upon us to recognize that judgments in these matters are rarely final and conclusive. ABM technology may become more reliable and resolve the technical doubts which persist about the system. The political tensions and hostilities that plague the search for peace may not yield to even the most earnest negotiations. The situation we now perceive may change. But that is hardly a reason for plunging ahead in a premature investment in weapons with such far-reaching implications for the future security of every human being on this planet. Now is the time to give this decision the closest possible scrutiny, while pursuing as diligently as possible the diplomatic alternative. That is what we propose and what we hope the Senate will support.

I thank the Senator from Kentucky who, as usual, has performed a great service in giving us the opportunity to air these views, discuss these matters, and permit the American people to know more about the matter because we could fool the American people into a false sense of security. They may be buying a package that does not give them the security they think they are obtaining.

Mr. COOPER. I thank the Senator. This is not to be a futile exercise, but we do expect to bring to bear whatever influence we can to prevent deployment of this system, at least until it is proven to be a system that will bring security to the United States and not danger.

Mr. BROOKE. I thank the Senator.

Mr. COOPER. I yield to the Senator from Montana.

Mr. MANSFIELD. The colloquy which has taken place this afternoon has been most enlightening. I was interested in so many questions that I cannot remember all of them.

The distinguished Senator from Massachusetts (Mr. BROOKE) raised the question as to whether or not this thin line is directed against Peking or, in effect, in the long run is to be directed against

the Soviet Union. If I recall the debate of last year, I believe that the manager of the bill made no bones about the fact that it would be directed against the Soviet Union.

It comes to mind that the Soviet Union, indirectly but not formally, but strongly, since the new administration has come into power, has indicated that it would like to sit down with us to discuss such things as the missile race, the ABM systems, the Mideast, and other matters of mutual concern and mutual worry.

I can understand why the present administration as yet has not had an opportunity to react, but I feel quite certain that they are giving these feelers from the Soviet Union—and I say this on my own responsibility only—every consideration, to see what, if anything, can be done; because I recall the President said, not once but several times, that now is the time to move into negotiations and away from confrontation. I believe him. I think that he is trying to find a way out of the impasse in which this country and, as a matter of fact the world, finds itself, because we cannot confine ourselves to United States-Soviet Union relations. Our interests encompass a far wider range. There are a good many difficult areas which we have to face up to, and we must try to find solutions to the problems which confront us there.

Mr. President, I have been pleased with the tone of the debate this afternoon. I was very much pleased with the statement made by the distinguished chairman of the Armed Services Committee, the Senator from Mississippi (Mr. STENNIS), because he indicated an open mind, that he was concerned, that he had some questions; and that he was going to see to it that all sides would be heard.

I think that is good.

I think that what the distinguished Senator from Kentucky and his colleagues on the floor of the Senate today are doing will have a beneficial effect not only so far as the hearings in the Armed Services Committee are concerned, but also in the Foreign Relations Committee as well, of which we are both members; as well as in the thinking of the administration.

I was pleased to note that the Senator from Mississippi indicated that the Secretary of Defense and the Under Secretary of Defense, the Director of the Budget, and others, were giving this matter their closest attention; and that he anticipated, when they got through with their surveys, they would be presented to the President and then, of course, he would make a decision.

I must say, frankly, that I have great faith, on the basis of the President's statement and activities so far, that he will go into this matter thoroughly, reasonably, and in depth. Let us hope that on the basis of the findings made by the Members who are in his administration, on the basis of the testimony given by witnesses outside the Department of Defense and related agencies, as well as on the basis of the consistent and continuous colloquy on this subject which has been going on in the Senate over the past

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3 years, a proper decision will be made at the right time.

Mr. President, it is my belief that we can go too far in this matter of a thin line, which I think is, in effect, a "make believe" line. I do not think it will have any effect in its present stage, although, for the time being, the main activity seems to be the purchase of real estate in Massachusetts, Illinois, Montana, Washington, and elsewhere. But we should be very careful that we do not get started on a project if it is not absolutely feasible and necessary, because this \$5.8 billion figure which the Senator from Massachusetts (Mr. Brooke) has mentioned, and the \$9.4 billion figure which the Senator from Missouri (Mr. Symington) has mentioned, are sizable increases from the \$5 billion figure. However, it is my understanding that at a minimum it will take at least \$50 billion to complete an ABM system, and it could well cost \$100 billion, or more—and very likely more.

Let me say that the Soviet Union is spending a similar amount of money to build a similar number of ABM's.

Where would both countries be at the end?

Right where they are today.

What would happen to the problems in our own country in the urban areas, in the poverty-stricken parts of this Nation, where money is needed and help is desired, and where we have a potential explosion which must be attended to?

Thus, I hope that, in the name of the American people, and in the name of mankind, we will not start on a mad race which will accomplish nothing for either country, but will merely increase danger for the world.

The Russians have problems at home. We have got enough in the way of problems at home, too.

Is there not some way that we can get together to try to work out these differences over ABM's and missiles, and try to work together to bring the Mideast into some sort of economic stability, and work together to build peace where possible throughout the world.

Instead of giving despair to mankind, let us give mankind hope.

I thank the Senator from Kentucky for yielding to me. [Applause].

Mr. COOPER. Mr. President, I deeply appreciate the statement of the majority leader.

He always speaks with wisdom. He speaks with good sense. He speaks with justice. He speaks with compassion.

He has made a speech today which the whole country should hear.

Mr. MANSFIELD. It is a pleasure and a privilege to work under the leadership of the distinguished Senator from Kentucky, as I have in the past 4 years in this particular field—only one among many.

I thank the Senator.

Mr. COOPER. Mr. President, I now yield to the Senator from Massachusetts (Mr. Kennedy), who has waited so long and so patiently to speak.

Mr. KENNEDY. Mr. President, I think that the country, and certainly the Senate, has benefited greatly from the discussion here this afternoon, most particularly by the comments of two of the

most thoughtful spokesmen in this body; namely, the distinguished Senator from Kentucky (Mr. Cooper) and the distinguished Senator from Montana (Mr. Mansfield).

I know that each Member of this body will benefit in the course of his own considerations and deliberations by reviewing the comments and the questions raised about this Sentinel ABM program by these two very thoughtful, creative, and sensitive men.

There is a steadily rising tide of doubt in this country about the soundness, necessity and cost of some of our national defense programs. Many of those Americans who have expressed these doubts most articulately have done so here in the Senate Chamber. Their ranks are ever growing, and this reflects, I think, the growing feeling in the country at large.

The Senate, charged with advising the President on foreign policy matters, is an entirely appropriate forum for a thorough examination of the course our national defense planners have charted. And the Congress itself, charged with examining and appropriating funds for requests to carry out this course, must bear the burden of insisting that these national defense policies are rational and sound.

Let me be entirely candid in expressing my belief that we in the Congress—with the notable exception of a few of our colleagues—have been remiss in bearing our responsibilities. We have not insisted on full information, in many cases, where national defense is at stake. We have appropriated funds for programs which have not proved workable, and which, after the expenditure of tens of billions of dollars, have been canceled. National defense programs have somehow been above the battle—it has always been implicit in many of our debates that it is perhaps unpatriotic to question the recommendations of the Department of Defense.

We are fortunate, I think, that this is increasingly less so than in the immediate past. If we in the Congress—and particularly in the Senate—take an ever larger role in the deliberations and decisions regarding the course our national defense policies take, then it is my own conviction that our country will be better defended at less cost, than our common desire for world peace will be more rapidly advanced, and that our division of Federal budget expenditures will be considerably more rational.

The particular concern which brings me to make these remarks is the planned deployment of the Sentinel anti-ballistic missile system. Administration figures indicate a cost of \$5.5 billion for deployment of a "thin" system. Yet most experts readily acknowledge that the pressures for deployment of a full Sentinel ABM system will be severe—and that this full system will cost upwards of \$60 billion. When, we should ask, has there been a full and candid national debate over the wisdom and desirability of committing this vast sum to a system which may well not work? Let me say that I do not believe we have had such a debate, but that we should.

We all remember the national debate

over medicare, a debate which raged for years. And we remember the long debate over the Elementary and Secondary Education Act. Each of these programs, programs which were, incidentally, long overdue, was enacted only after the most complete and microscopic examination of the pluses and the minuses. It is high time that programs for national defense no longer receive carte blanche treatment in the Congress. Instead, they should be subjected to the same scrutiny as other programs. I share this view with a large number of my colleagues, and it is highly appropriate that as the new Administration reviews the decisions made two, three, and more years ago relating to national defense and foreign policy, and examines the underlying assumptions and rationale, we in the Congress should, too, demand fuller and more candid discussion.

The Sentinel ABM system is a case in point.

It was put forward as a defense against an unsophisticated Chinese ICBM threat. Yet we have evidence that the Chinese are developing weapons systems which would make the Sentinel system obsolete.

It was put forward at a cost of \$3.5 billion. Yet present estimates have risen to \$5.5 billion, and perhaps to \$9.4 billion.

It was put forward when arms limitation discussions with the Soviets were in only preliminary stages. Yet we now have hard evidence that the Soviets wish to proceed immediately with disarmament talks.

It was put forward as a means of saving American lives in a nuclear exchange. Yet Defense Department figures indicate this assumption to be in error.

It was put forward on the argument that Sentinel deployment would strengthen our bargaining position vis-a-vis the Soviets. Yet analysis of this argument reveals its basic unsoundness.

These are only a few of the questions which raise grave doubts about the wisdom of carrying the decision to deploy Sentinel forward, and whether it creates not true security, but instead a false security.

I, for one, am against that decision. I was when it was made. And I will work with my colleagues here in the Senate to see it reversed.

As background for that work, it may be helpful to offer a review in some detail of the major issues, as I see them, which will be at stake in the Senate debates this year.

In September of 1967, our Government announced plans to deploy a limited antiballistic missile system at various sites across the United States. The Sentinel system relies upon coordinated use of a battery of different components for its effectiveness. It uses central computers, two types of radars, and two types of missiles to seek out and destroy incoming enemy intercontinental ballistic missiles before they reach the United States.

The first type of radar is the perimeter acquisition radar—PAR—used for long-range tracking of incoming missiles. The second is the missile site radar—MSR—used both for shorter range tracking of incoming missiles and for guiding our

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own defending U.S. missiles to their targets. The first missile type is the Spartan, a three-stage solid propellant missile launched from an underground silo. It has a range of several hundred miles, carries a thermonuclear warhead, and is designed for long-range interception of incoming missiles. The second missile type is the Sprint, a two-stage, solid propellant missile, also nuclear tipped and launched from an underground silo. It is designed for short-range interception of the incoming missiles which have penetrated the long-range Spartan defense.

As presently planned, the "thin" Sentinel system would include six PAR radars, ranged along the northern border of the United States and in Hawaii and Alaska, facing the polar routes of incoming missiles. Each PAR site would be about 300 acres in size, and the PAR itself would be housed in a concrete building 140 feet long and 330 feet wide. Each PAR site would also be connected to a number of "farms" of Spartan missiles, and next to each Spartan farm would be a farm of Sprint missiles together with a MSR site. The MSR sites would be about 280 acres in size.

Site for Sentinel missile farms have been announced near Boston; Cheyenne, Wyo.; Chicago; Grand Forks, N. Dak.; Great Falls, Mont.; Los Angeles; New York City; Salt Lake City; Seattle; Albany, Ga.; San Francisco; Sedalia, Mo.; and Honolulu.

The scientists and engineers who developed the Sentinel system have quite literally accomplished technological miracles, devising equipment of immense sophistication. Construction of the Sentinel ABM system would be the single most complicated engineering feat ever undertaken in the world. There is, however, considerable and convincing evidence that despite these technological miracles, and despite our undoubted ability to complete this engineering feat, construction of the Sentinel ABM system would be a waste of money. Even worse, construction of the system may set the cause of world peace back immeasurably.

Last week, I wrote to Secretary of Defense Laird and asked him to place an immediate freeze on all Defense Department activity relating to the construction of the Sentinel ABM system sites. I did so because of increasing evidence that pushing forward with the Sentinel system would be a serious mistake. Many of our Nation's most eminent scientists some with experience at the highest policy levels of our Government, make what appears to be an irrefutable case against continuing deployment of the Sentinel system. This case is not grounded merely on technical, or on budgetary, or on larger foreign policy considerations. Rather, it encompasses all these considerations, and more, and for this reason is so compelling. It also raises serious questions about the influence of the military-industrial complex upon the Nation's policymaking procedures.

The first of the Sentinel system sites is planned for just outside Boston. A PAR site is presently under construction in North Andover, Mass.; and the notices of invitation to bid on the initial phases of

an MSR site in the Lynnfield-Reading area of Massachusetts, are scheduled to go out on February 20, 1969. The Department of the Army has conducted a series of meetings in Massachusetts, in an effort to explain to the residents of the Boston area what the Sentinel system facilities involve.

The most recent of these meetings was held at the Reading High School last Wednesday evening, and attended by some 1,500 persons. Among those present were a number of eminent scientists, and the information they presented and the arguments they made merit review, I think, in the Congress. In sum, the case they made questions the very soundness of the decision to deploy the Sentinel SBM system. Let me summarize the points made at the meeting:

First, technical questions. We simply do not have convincing evidence that the Sentinel system will function under combat conditions, against either a Chinese threat or, particularly, against a Soviet threat. The component missiles of the Sentinel system—the Spartan and the Sprint—have proven under test conditions that they can intercept an incoming ICBM, and that their warheads can neutralize an enemy missile. But we have learned that our radars are blacked out for some minutes after an atmospheric nuclear explosion, because of the cloud of ionized gas such an explosion creates. While this cloud is dissipating, which takes some minutes, the heart of the Sentinel system—the sophisticated radars—are useless. This gives rise to the prospect of an enemy deliberately holding back the bulk of a hypothetical salvo, until our radars are blacked out, perhaps from the explosion of our own defending missiles. Then this enemy would loose the bulk of his attacking missiles, which would be undetected by our Sentinel and hit their U.S. targets.

Then, too, there are other questions. In response to reports of limited Soviet deployment of an ABM system, the U.S. is developing counter-measures—including multiple independent re-entry vehicles (MIRVs), which will permit a single missile to carry up to ten warheads. All evidence indicates that the Soviets are developing similar offensive counter-measures to our Sentinel and other weapons systems, such as orbital delivery systems and low-flying missiles in fractional orbits (FOBS), which would not be detected by our radar defenses. There is another, somewhat different, technical question well worth repeating. By the very fact of including the short-range Sprint in the Sentinel system, our planners have indicated their belief that some number of enemy missiles will penetrate the long-range Spartan shield, and thus must be intercepted at lower altitudes by the Sprint. A determined enemy might set his incoming missiles to detonate at an altitude of 50,000 feet, or about where a Sprint intercept might take place. Yet the detonation of a large nuclear warhead at 50,000 feet would cause great devastation in a large area beneath it—fire and radiation devastation. An enemy might also direct a warhead with a high fallout yield into an unpopulated area, not protected by a point defense Sprint missile. The fallout

from this weapon could destroy the United States just as well as could a direct hit.

In sum, there are two threads to the unresolved technical questions. In the first place, as Dr. Jerome Wiesner, Science Advisor to Presidents Kennedy and Johnson, pointed out recently:

A few competent people expect the extremely complex ABM system to work the first time; yet it must to have any effect.

And in the second place, as former Defense Secretary McNamara pointed out recently in commenting on the reported Soviet ABM deployment:

I do not think there is a senior civilian or military official in the Defense Department that does not believe that . . . we have the technical capability to react in such a way as to assure our continued capability to penetrate that Soviet ABM defence.

Since the Soviets have shown that they have a technological capability which can match ours, I am sure that the senior Soviet officials believe they can penetrate the Sentinel ABM defense we are developing, just as we believe we can penetrate any system they develop.

Second, our relations with the Soviet Union. In his January 18, 1969, statement on national defense posture, former Defense Secretary Clifford said that we stand "on the eve of a new round in the armaments race with the Soviet Union, a race which will contribute nothing to the real security of either side, while increasing substantially the already great defense burdens of both." Secretary Clifford then urged pursuit of an agreement with the Soviets on a limitation of armaments. For at least three years, our Government has sought to persuade the Soviets to agree on such a limitation. A number of our colleagues in the Senate have recently visited with the Soviet leadership, and reported to the Senate that the Soviet are ready to begin discussions with the United States. One indication of this readiness may be the report of Secretary Clifford, also in his defense posture statement, that the Soviets have curtailed construction of a Moscow-area ABM system.

So much, of such large importance to the future of mankind, hangs in the balance of agreeing to limit armaments, that we must not follow any course—no matter when or by whom set—which leads to an intensification of the arms race. As Secretary Clifford pointed out, our best intelligence tells us that the Soviets are slowing construction of their limited ABM system. Should we provoke them into speeding up construction, by building our own, and thus exacerbate the tensions which lie between us? I think not. We should raise the prospects for world peace by seeking to phase the armaments race down, not be escalating it.

Third, site location. In Massachusetts, the two Sentinel system site locations are in the greater Boston metropolitan area. The sites near Seattle and Chicago are likewise situated in populated areas. This site placement raises three immediate and important questions, one relating to safety from accidental explosions, one to enemy targeting considerations, and the last to the rationale for constructing a "thin" Sentinel system. While the exact figures are classified, the best estimates

are that an accidental explosion in the silo of a Spartan warhead would cause total devastation in an area 5 miles in diameter, and serious destruction over a far greater area. Although the risk of accidental explosion is very low, it is not zero—and for this reason, it would seem reasonable to ask why at least the Spartan missiles are not placed in unpopulated areas, just as our ICBM's are. This is particularly so in the light of expert testimony that should the missiles be 50, or a 100 miles distant from the Boston area, the quality of protection accorded Boston would not differ. Since, with incoming ICBM's we are dealing in distances of many thousands of miles, it would hardly be different were the Sentinel missiles located more remotely from Boston and other populated areas, where safety would be much higher.

Another factor related to site location is enemy targeting. We must assume that our Sentinel ABM sites—certainly the PAR radars—would be prime enemy targets in the event of attack. On this basis also, they should be placed in remote areas, as the most rudimentary safeguard. And this is so whether or not we assume that a hypothetical enemy would consider population centers as the prime target.

Finally, one must draw the reluctant conclusion that the Sentinel sites are close to population centers because our planners envisage not a "thin" ABM system, but instead a full one. For if we planned only a "thin" system, there would be no need to place the sites close to the cities. Instead, they could be put in remote countryside areas.

Fourth, cost. When first discussed in early 1967, the costs of this "thin" Sentinel ABM system were estimated to be \$3.5 billion. By September, 1967, when the deployment decision was announced by the Government, the cost had risen to \$5 billion. The most recent estimates are \$5.5 billion. Previous experience with weapons systems of this type make it a near certainty that these estimates will be far too low—that we may eventually spend \$10 or \$15 billion on just this "thin" system before it is completed. We must not, either, ignore what will be strong pressures to expand the "thin" Sentinel system into a full-blown, extensive ABM system, at cost estimates which run upwards of \$60 billion.

Before we get too far along in committing ourselves to a project with this price tag, we should be certain we are buying a system which will work, and which will not be obsolete in 5 or 10 years. Obsolescence is an unfortunate hallmark of many of our military defense programs, largely because of long leadtimes and unexpected technological advances. Former Deputy Secretary of Defense Cyrus Vance testified 2 years ago that—

Because of the very rapid rate at which the technology changes, to maintain an effective (ABM) system one would essentially have to turn over the whole system every few years.

If, by 1975, the Sentinel system is obsolete, can we say that the funds spent to construct it were wisely spent? Our second-strike missile capability is now universally acknowledged to be sufficient to destroy Russia and China; would they be less willing to attack us because we have

a "thin" ABM system which we cannot even be sure will work under combat conditions? I do not think so, and consequently think whatever funds we do spend on Sentinel deployment will be spent unwisely.

Fifth, bargaining posture. Supporters of the Sentinel ABM system often make the argument that construction of the system will strengthen the bargaining position of the United States vis-a-vis the Soviets, in any disarmament talks.

This argument seems particularly fallacious to me, on a number of counts. In the first place, since even Sentinel proponents concede that the "thin" Sentinel system would be ineffective against a Soviet attack, and ineffective against whatever sophisticated missiles the Chinese possess, I can see no advantage at all, in talks with the Soviets, in having an ABM system which has virtually no impact on their offensive missile capability.

In the second place, by the middle of this year the Soviets will be on a parity with the United States in the number of deployed ICBMs. In any disarmament talks, it is inconceivable that they would agree to an arms moratorium requiring them to come out at a disadvantage vis-a-vis the United States, a disadvantage from which they did not suffer when the talks began. The same argument applies to an ABM system. It is inconceivable that the Soviets would agree to a moratorium permitting the United States to maintain an ABM system, while they—the Soviets—did not have an effective one. Consequently, construction of the Sentinel system will have no relevance whatever upon our bargaining posture.

And in the third place, assuming that we did complete the "thin" Sentinel system, and that the Soviets did correspondingly, and then we reached a disarmament agreement—we would then, presumably, dismantle the Sentinel system which would have gained us nothing in the negotiations and cost us billions of dollars. Only if we viewed the ABM system as important vis-a-vis a Chinese threat, would it make sense to maintain an ABM system. In this regard, it is interesting to note that the Soviets—who may have reason to fear Chinese intermediate range missiles—have curtailed their own ABM construction activity.

In sum, I see no validity to the argument that we need a Sentinel system to strengthen our hand with the Soviets—the "thin" Sentinel cannot make us any stronger than we now are.

Sixth, distortion of Federal funding priorities. The costs of the Vietnam war have seriously threatened the stability of our economy, and have forced a severe cutback in Federal expenditures for the nonmilitary programs in education, housing, health, employment, and conservation. This cutback is generally conceded to be at least partly responsible for the divisions and unrest with which we have had to deal here at home in the last 30 months.

One measure of how drastic the cutback has been is the difference between the authorization and the appropriation for any given program. Writing in Agenda for the Nation, former Budget Bureau Director Charles Schultze said that—

A sample count of fifteen programs, all dealing with relatively important social problems, indicated that actual program levels in fiscal 1969 were about \$5 billion below the authorized amount.

This underfunding of our domestic programs simply cannot be allowed to continue. Many of us in the Congress have long hoped that the "peace dividend," the funds which would be freed up for purposes other than Vietnam when the war there is phased down, could be applied to these underfunded domestic programs. This would be a major step forward, in my opinion, in redressing the present distortion in our budget priorities. If, on the other hand, we are to see the "peace dividend"—whatever may be its size—diverted to the Sentinel and similar projects, then we stand little chance of reuniting the Nation.

Seventh, limitation of U.S. casualties. The argument is generally made that deployment of even a "thin" Sentinel system will save American lives in the event of a nuclear exchange. But based on official, published Defense Department figures, this is simply not so. These figures appear in former Secretary McNamara's testimony last year before the Appropriations Committees. In sum, they indicate that a Soviet preemptive first strike against U.S. military and city targets would cause 120 million casualties. The figures then indicate that deployment of the "thin" Sentinel system would reduce this casualty figure by 20 million, to 100 million—so long as the Soviets did not respond to our ABM deployment by installing penetration aids on their offensive missile systems. If, on the other hand, the Soviets did respond by installing penetration aids, then the casualty figure would again be 120 million—precisely where we would be without the Sentinel ABM system. Can there be anyone who doubts the intention and capability to respond to our initiatives. I, for one, feel sure that Soviet scientists and engineers are working to develop and install penetration devices, just as we are.

There are many more arguments to be put forward against deploying the Sentinel ABM system, many of which were aired in Senate debates last year. In the main, they question using a missile threat from China as the justification for constructing a "thin" Sentinel ABM system, pointing out that we will force the Chinese to develop sophisticated ICBM and submarine-launched missiles by deploying an ABM system. This will in turn force us to take other steps to counter the Chinese steps, and so on, ad infinitum.

When the budget request for fiscal year 1970, for funds to continue deployment of the Sentinel, comes before the Senate, both on authorization and appropriation requests, I am sure that the debates of last year will be reopened. And there is much new evidence and information available now, which was not available then, throwing open to even more serious question the efficacy of the Sentinel ABM system. It is my intention, working in concert with other Senators, to ask the Senate to deny any request for additional funds to deploy the Sentinel system. I shall also ask that no further construction work on deployment using funds already appropriated be carried out, and that instead those funds be used for con-

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tinued research and development of an ABM system. For the sake of our national preparedness, we must continue our research and development effort; but for the sake of domestic tranquility and of world peace, I think we must stop work on deployment.

Pending resolution by the Congress of this question, I would like to restate my suggestion of last week to Secretary Laird: that he put a freeze on any Department of Defense activity actually related to deployment of the Sentinel ABM system, while not changing the status of research and development on ABM systems. Such a freeze would be strong evidence of good faith in our pledge to limit the arms race. It would permit time for a review of Sentinel site placement near populated areas. It would change the assumption regarding the Sentinel system, by forcing its proponents to convince the policymakers that it is a wise expenditure instead of forcing its opponents to convince them that it is unwise. It would be dramatic evidence to a troubled world that the first concern of the United States is world peace. And finally, it would be a dramatic initiative on the part of the United States toward arms limitation discussions with the Soviets.

It is my understanding that Secretary Laird and Undersecretary Packard are presently reviewing the decision to deploy the Sentinel ABM system—a decision made 2 years ago. It is my hope that they will present their review to the National Security Council, for this decision should not be made on military grounds alone. It is, instead, inextricably wound up with the most basic of our foreign policy considerations, our budgetary concerns, and our intelligence estimates.

President Nixon has asked that the National Security Council recommend a policy course to him on the nuclear non-proliferation treaty. It is entirely appropriate that the Sentinel ABM system, and its future, be treated similarly, and I would hope that the National Security Council be asked its view of the Defense Department's recommendations.

We have too much at stake, in the debate over the Sentinel ABM system, to let past decisions control our present and future course. Instead, we have the opportunity to think through the rationale for deploying Sentinel. It is a rare opportunity, and we must grasp it for the sake of our own children, and of theirs.

I must say, Mr. President, that I share the pleasure of the distinguished Senator from Missouri (Mr. SYMINGTON), the distinguished Senator from Montana (Mr. MANSFIELD), and the distinguished Senator from Kentucky (Mr. COOPER), in the fact that there will be open hearings on the Sentinel this year, and that in them we will have the benefit of the testimony of non-Government experts who have experience and background in this area. I know they can add to the knowledge and understanding of all of us in this body.

So I think the distinguished Senator from Kentucky has performed a very important service, as have my other colleagues as well, in addressing themselves to this matter in the early part of this session. We know the President is giving the matter serious thought. When he is aware of the very deep feeling of the

Members of this body, who cover a very wide spectrum of political experience and understanding, coming from different parts of the country, and when he understands the very serious reservations that have been expressed in this body for a whole host of reasons, I think it is entirely appropriate that a hold or freeze be put on this program and that further expenditures be halted until the Senate and the House and the President have a chance to review this program.

So I, too, want to congratulate the Senator from Kentucky. The hour is late. I think the fact that there were as many Senators here to speak on this, and the fact that other Senators have filed statements in the Record and have indicated that they will continue to speak about it, really demonstrates, as clearly as it is possible to demonstrate, the extraordinary importance that many of us place upon this problem. It demonstrates as well our very deep-seated belief that there needs to be a total review, and that we should take no further steps in this program without that total review.

Mr. COOPER. Mr. President, I think the questions which the Senator from Massachusetts addressed to the Secretary of Defense are of vast importance. I appreciate also the cooperative and rational approach that he takes toward the efforts of the administration and its necessary review of the ABM problem. I appreciate the wisdom of his views.

We have been in session a long time. I am going to close. I will simply say again that it is our purpose to continue to seek information, to debate this question, to do our best to influence the administration, and if necessary to defeat the proposed appropriation of funds for further deployment of the ABM system.

Mr. HATFIELD. Mr. President, the issue of the "thin" anti-ballistic-missile system has been brought to the floor on two prior occasions and, as then, I now oppose the construction of an ABM system. Consistent with my desire to see the Vietnam war brought to an end and the need for the world's major powers to seek peace and tranquility throughout the world, it is my contention that an end to the construction of the ABM systems is an essential step.

My position should not be construed to be an oversight of the fact that continued research and development work on an antimissile system must not cease because of its necessity for our national preparedness. In retrospect, it seems quite clear that we undertook the construction program without thoroughly evaluating the worth or merit of the system, therefore we find ourselves seeking to freeze another project that we were ill advised to undertake initially.

Furthermore, there have been certain technical problems raised which leave serious doubts as to whether the ABM's could, in fact, do the job under emergency conditions. Several other arguments have been presented in opposition to the ABM system, many of which are tenable; however, my strongest misgivings of the system lie in the fact that we should not continue to finance a system that offers such a small degree of certainty that it can do the job. Also, a U.S. commitment to freeze the construction

of the ABM system will be a major effort to reduce world tensions. Therefore, I join my colleagues in urging the administration to freeze all activities related to the construction of Sentinel sites.

Mr. NELSON. Mr. President, a fresh attack is being levied against the Sentinel antiballistic-missile system. Residents near the areas in which these missile sites are going to be built are greatly disturbed, and are expressing their dissatisfaction in increasing numbers.

As a case in point, in the Chicago area, public hostility and resistance to the army's site selection has been considerable. Recently, three North Chicago municipalities adopted resolutions stating their opposition to the construction of ABM's near their communities.

Apparently, these people are apprehensive over the prospect of having antiballistic missiles right in their own backyard. Certainly, the fears of these residents that an accidental explosion could wipe out their whole community may be legitimate.

But while these concerns may be justified, there are other equally as persuasive reasons for halting construction of the Sentinel ABM.

First based upon the present state of missile technology, the Sentinel system would not be effective against an all-out enemy missile attack. In addition, initiating construction of the ABM could hamper prospects for a United States-Soviet arms control agreement. Also, at this critical stage of our economy, when Federal funds are desperately needed to meet the crisis of our environment and of our cities, allocating billions of dollars to a project that has never been proven to be effective seems unwise to me.

The battle over the ABM is intensifying and I am hopeful that when the Congress reconsiders this project, it will decide to delay it until adequate research and development proves it effective.

So that my colleagues may become more familiar with the sentiments of the concerned citizens of the Chicago area, I ask unanimous consent that an article appearing in the January 23, 1969, edition of the Chicago Tribune be reprinted in the RECORD.

In addition, I ask unanimous consent that the excellent article entitled "H-Bombs in the Back Yard," also be reprinted in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

[From the Chicago (Ill.) Tribune,
Jan. 23, 1969]

THREE SUBURBS' RESOLUTIONS DISAPPROVE OF NIKE MISSILE SITE

(By Patricia Stemper)

Three north Chicago municipalities last week adopted resolutions stating their disapproval of the site for the planned Sentinel anti-ballistic missile base south of Libertyville.

They are the Highland Park city council, and the Lincolnshire and Northbrook village boards.

More than 100 Highland Park residents, some of whom are members of the Northern Illinois Citizens Against Anti-Ballistic Missile [NICAABM], attended last week's city council meeting to urge the council to adopt a resolution opposing the missile site.

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NO ONE IS INFALLIBLE

"No man in the world is infallible," said Dr. Benjamin Ziedman, a nuclear physicist at Argonne National Laboratory who addressed the council. "We know an accident is possible. In the event of an accident, Highland Park ceases to exist," he said.

"Based on the information we have, all we can do is to ask that the site be reconsidered rather than opposed," said Raymond Geraci, councilman. "Otherwise we are preempting the government," he said.

At first, the council unanimously adopted an unwritten resolution recommending to the defense department that it reconsider installing the missile site in Libertyville.

RESIDENTS OBJECT

However, after receiving objections from residents who said they wanted a stronger resolution—one that stated that "the city of Highland Park is opposed to the Libertyville site as a missile base or any site near a densely populated area"—the council later in the week drafted a written resolution.

Altho the final draft does not state its opposition to the missile site, it "strongly urges" the defense department to reconsider its designation of Libertyville as a Sentinel antiballistic missile site "in the interest of safety to adjacent communities," and to relocate the site to an "area of less dense population."

When the final draft was written, the residents were represented by Jerome Man, a Highland Park resident who is running for councilman in the forthcoming election. The council asked that the residents choose a representative to meet with the council when the resolution was drafted. Man also was the [NICAABM] spokesman at the council meeting.

ARMY GAVE FACTS

In the events at the council meeting which led to the drafting of the written resolution, the residents said they could take action based on the information they have been given by the army. "We have that right," said a resident. "The burden should be on the government to supply the last bit of information."

The council said that having a resolution which recommends that the defense department change the planned missile site "is opposing the site in a different form."

The Lincolnshire village board last week adopted a resolution which opposes the Libertyville site for an antiballistic missile system because of the dense population in the area, said Dave Soulak, village administrator.

VILLAGE IS NEAR SITE

He said the board adopted the resolution because Lincolnshire's northwest boundary is 1½ miles from the planned missile site.

The resolution also asks the defense department to change the site to a less populated area 25 to 50 miles northwest of the planned site.

At the board meeting, the board received a petition signed by 125 to 135 residents asking that the site not be located at the abandoned 180-acre Nike missile base north of United States highway 45, 1½ miles northwest of Half Day, Soulak said.

STRONG RESOLUTION

"The resolution is the strongest one we could possibly make," he said.

The Northbrook village board's resolution also "strongly opposes" the installation of the missile system near Libertyville or in any part of the Chicago metropolitan area.

The vote on the resolution was 4 yes and 2 pass.

GLENVIEW ACTED

In December, the Glenview village board adopted a similar resolution by a unanimous vote.

Construction of the 70-million-dollar site is expected to begin in July. It is being developed as a possible deterrent of enemy

atomic capability which experts believe will be developed by the mid-1970's.

H-BOMBS IN THE BACK YARD

(By David R. Ingalls)

A reporter for a small suburban newspaper recently visited a drilling rig on the edge of Clarendon Hills, a western suburb of Chicago, and inquired what was up. He learned that the Army was exploring for a suitable site for anti-ballistic missiles. A scientist from the suburban Argonne National Laboratory noticed the story; subsequent luncheon-table discussions aroused concern among scientists which soon spread to the Chicago news media. Insidious are the ways of military public relations, and this is how Chicago happened to learn that, if all goes as planned, it is to have H-bomb-tipped missiles installed in its own back yard, on the edge of Cook County upward from the Loop.

When one of the scientists went to talk to the colonel in charge of the drilling operation, he was astounded to learn that the Sentinel installation was to include long-range Spartan missiles, in addition to the short-range Sprints. Only the Sprints might conceivably have some reason to be near a city if Congress should in the future opt for an attempt at city defense and authorize something much larger than the \$5-billion Sentinel system. Later word from Lieut. Gen. A. D. Starbird, after a secret briefing in Chicago on November 29, is still more surprising: The site will have only long-range Spartans, no Sprints. Some other sites may get Sprints.

The capability claimed for the Sentinel system is that its Spartan missiles can stop a small attack by a few missiles—such as the Chinese might have in the mid-Seventies—if they are as primitive as our first ICBMs in lacking penetration aids. The Sprints of the system are mainly to protect its Spartans and the accompanying radar. An optional "kicker" in the system, as was explained by its promoters, is that its short-range Sprints might be used to provide some protection for our ICBMs in their underground silos, and thus slightly blunt a Soviet counterforce attack.

There are, of course, far-reaching implications of the decisions to deploy an ABM system, implications for the stability of the nuclear deterrent, for the future of the entire arms race, and for the possibility of diplomatic initiatives that might reduce the likelihood of nuclear war. But there are, in addition, two purely local objections. First is the possibility that, in a limited nuclear war with the Soviet Union, local Spartans might draw enemy fire to the city. The Army's reply is that the population centers are prime targets in any event. But who knows? There has been long and vacillating argument about the "counterforce" and "counter-population" options of nuclear attack. Should an attacker spend his first salvos on the missiles of the enemy in an attempt to minimize retribution, or should he concentrate on doing "unacceptable damage" to the population and expect to take the brunt of a counterattack on his own population?

The think-tank pendulum has swung between one and the other. Counter-population is the current style on our side and that is what the Army means by saying the cities are prime targets in any event. But, who knows, the Soviet high command might believe in counterforce ten years from now. If they should follow this course, and on some tense occasion attack, they might decide to strike at the Spartans on the edge of Cook County that could conceivably defend some of our ICBMs. In the process they would devastate Chicago and pulverize some western suburbs. If, on the other hand, they decide to attack both types of targets, we will have helped them kill two birds with one stone.

An objection based on the distinction between limited and all-out nuclear war may

seem not very serious because any nuclear war would represent a disastrous failure of policy, and it is hard to believe that it could remain limited. However, there is also no serious reason for the Spartans to be close to cities, since their effectiveness must be nearly uniform over the central part of the 600 to 1,000 mile-wide region they attempt to defend. This is implied in various official statements and in information given to Congress during debates leading up to the initial appropriations for the system. There was very little discussion of where the sites would be, but Congressman Sikes, floor leader for the Sentinel appropriation, stated in the House on July 29, 1968, that "these sites will be some distance away from the centers of population."

In reply to the sudden publicity, the Chicago *Sun-Times* of November 16 quoted Col. R. J. Bennett, information officer of the Huntsville, Alabama, missile center, as saying: "The Sentinel site near Chicago is necessary to complete the Sentinel defense of the entire United States. To make such a defense most effective, considering the projection of future defense needs, this site should be near the center of the greatest population."

Here is the tip-off of the Army's intentions. Congress has authorized the deployment of the Sentinel system and has funded its initial stages, particularly site acquisition. In the Senate debates, the main motivations for deployment given by the promoters of the system were defense against a Chinese attack and the protection it might afford against an accidental launching of a Soviet ICBM. There were a few Senators who frankly argued for it as a step toward a much larger anti-Soviet system, which is probably the real reason the inherently expansive Department of Defense supports it. The initial Sentinel, it was said, might serve as a "building block" for the much larger system. Still, it seems clear that most of the Senators who voted for the deployment—and the votes were fairly close—did so out of a feeling that, being in doubt, they should now support only the limited Sentinel system and either oppose the larger system or put off the larger decision. Thus in using a "projection of future defense needs" to justify putting Spartans near large populations, the Army seems to be jumping the gun on a Congressional decision and acquiring sites for the larger anti-Soviet system, under the guise of limited Sentinel deployment.

A second local objection to these sites is that there is some chance, probably very small, that one of the cluster of H-bomb warheads installed on the edge of the city might accidentally explode, and if it should, the consequent loss of life could be catastrophic. A surface burst or a shallow subsurface burst in a silo produces much more fallout—from vaporized and activated earth—than a normal explosion high in the air. The Spartan warhead is said to be "in the megaton range." This would indicate a weapon approximately a hundred times as powerful as the bomb that destroyed Hiroshima from half a mile in the air. Its local fallout from an accidental subsurface burst would be highly lethal throughout a large metropolitan area and for many miles downwind. There would be less blast damage than from an air burst, but it would still be widespread enough to flatten several suburbs.

An accidental explosion of a Sprint would, of course, be much less lethal. How much less is hard to say because we are told only that its warhead is much less powerful than a Spartan—"in the kiloton range." Taken literally, this could mean anywhere from one kiloton, or perhaps even less, to a hundred kilotons or more. Indications are, however, that it is considerably less powerful than the 20 kilotons of the Hiroshima bomb or the first A-bomb tested 100 feet above the New Mexico desert. Even so, it could pose a serious hazard in the vicinity because of the

high amount of fallout produced by a shallow subsurface detonation. Whatever the uncertain magnitude of this Sprint hazard may be, an accidental burst of the monstrously powerful Spartan warhead would be calamitous indeed.

To this objection, Colonel Bennett was quoted, by the Chicago *Daily News* of November 15, as saying: "There has never been an accidental nuclear explosion. The control devices are so good and so involved that an accidental explosion is not a danger." This sounds like a good, commonsense attitude. The voice of experience. Many military personnel get accustomed to living with dangers. A soldier knows that the grenade he carries could blow him to bits if the pin were accidentally pulled, but after living with it on his belt for a year he forgets about the slight danger. Even so, most civilians would prefer not to live on a power keg without some very good reason for doing so.

Designers have worked hard to make the control devices as effective as humanly possible, and they must be good, for the record is very good. It even happens to be perfect. We don't hear much about the near-accidents, but in the case of one H-bomb dropped accidentally in North Carolina in 1961, it was reported that five of the six safety devices had failed. There were six, and the bomb was "unarmed" so there was no detonation. An H-bomb in the bay of an airplane can be carried "unarmed," with one vital part to be inserted before dropping, because there is plenty of time to "arm" it on the way to the target. Thus it may be intrinsically easier to make it safe than it is for a missile such as the Sprint, which must be ready to fire within a few minutes of the first warning and within a fraction of a second of identification of its target. We haven't had experience with those yet. But even ignoring this distinction, the good record is not completely convincing.

Experience with bomb accidents is the sort of stuff that the study of statistical probabilities is made of. Let us think about a variant of the ghoulish game of "Russian Roulette." A six-shooter has a cylinder with six bullet slots. Suppose you are given one not knowing whether it is loaded. You are permitted to spin the cylinder ten times—or even a hundred times—and pull the trigger. You do so and it does not fire. You are then to point it at your head and pull the trigger. Would you feel sure that you would not kill yourself? Fairly sure? Yes. But certain? No.

The armed forces have been storing or handling, let us say, 10,000 nuclear bombs for perhaps ten years. They point to the fact that none has exploded as proof that none will explode accidentally. They propose to store, at a guess, a thousand nuclear warheads near American cities for the next ten years. According to past experience the probability that one of them will explode accidentally is not more than 10 per cent. Citizens of Chicago may take comfort that that is divided among ten cities or so, so locally there may be only about one chance in a hundred of serious trouble in the next ten years. That is about all that can be proved by Colonel Bennett's reference to the good record. It may be good common sense to ignore a small risk like one chance in a hundred, even if the event would be catastrophic, for one feels that life is full of dangers. But let us look at the small chances on the other side of the coin.

Why are we installing this Sentinel system? The reasons are confused; they involve China and Russia, they involve military and industrial pressures on Congress, and citizen anxiety or apathy and many other factors. So let us simplify again by considering only the official reasons given for the Sentinel deployment. Colonel Bennett said: "The Sentinel system is designed to defend the nation against a possible delivered missile attack by the Chinese Republic or an accidental launch of a nuclear-armed intercontinental missile by any foreign power."

The same Army spokesman who wants us to ignore the small chance of an accidental explosion at home by claiming that it does not exist is inviting us to worry about the chance that China, with a few missiles, will attack a country with thousands of missiles and to worry that an accidental launch of a Russian missile will hit one of our cities! There are few things of which one can be absolutely sure, but common sense should make us very nearly certain that the Chinese, at a time when they will have only a few intercontinental missiles, would not make a completely suicidal attack against the tremendous nuclear might of the United States. Such an attack seems much less certain than an accidental Sprint or Spartan detonation.

More serious than the Chinese "threat" is the technical possibility that an accidentally launched Russian missile might come our way. We have more than a thousand missiles in underground silos, with their computers and radars all adjusted to guide them toward various Russian cities and missile sites, and the Soviets likewise have several hundred missiles aimed at us. The chance that a Soviet missile would be launched accidentally may seem fairly remote. But what we are considering is more unlikely than that. We are considering the chance not only that a Soviet missile will malfunction and be launched, but that it will malfunction in such a way that it functions perfectly and aims directly at an American city 8,000 miles away. Although the likelihood of this double feat seems very small indeed, it is perhaps more probable than a Chinese attack.

Which, then, seems the more likely: a few hundred Soviet missiles being so perfectly launched accidentally as to hit an American city, or one of several hundred American missiles simply exploding accidentally where it sits on the edge of a city? The first seems to require two accidents in succession, the latter a single accident. Even if it is a fairly remote chance, it seems considerably more likely that an American city would suffer nuclear calamity from an accident at home than from a Soviet accident.

Thus, if the Army persists in its plan to put the Sentinel missile sites on the edge of population centers, even from the limited local point of view the cure is worse than the disease. This situation could be remedied by moving the missile sites out into open country, where the Spartans would be just as ready to intercept an accidentally launched missile.

Civilians can make such a change when the Army submits its missile-site plans for Congressional approval, starting with a hearing before the normally cooperative Joint Armed Services Committee, scheduled for this month.

Introducing more danger than one is trying to prevent is typical of the whole effort to attain national safety through ABM defense. This larger folly can be remedied only by having the people and their Congress learn, perhaps through these local mistakes, that national safety is not to be sought by pursuing the will-o'-the-wisp of ABM defense. This defense would not be effective against a massive Soviet attack, according to those highly placed experts who have had a thorough look at the military and technical factors involved, but who have no vested interest in military empire-building—former Defense Secretary Robert S. McNamara and all of the science advisers of the last three Presidents. People must learn that national safety in the precarious nuclear age should be sought instead by more vigorous pursuit of international agreements—which the Soviet Union appears to be ready to pursue to our mutual benefit—by cutting off the deployment of offensive and defensive missiles of the nuclear giants, by avoiding the spread of nuclear weapons to many nations, and by otherwise "taming the atom" so that we may turn our energies more fully

to improving the lot of mankind and removing the causes of war.

Mr. NELSON. Mr. President, as the Senate seeks ways to limit defense spending—particularly to forestall the tragic new cycle in the arms race which the ABM portends—we must take candid account of the nearly-automatic forces in our own economy which foster the production of ever more sophisticated and costly weapons.

I invite the attention of the Senate to a frank and thoughtful speech on this subject by our new colleague from Missouri (Mr. EAGLETON).

The Senator reminds us that when we speak of the "military-industrial complex," we are talking "not about a coterie of skulking warmongers, but a sizeable portion of the American population" whose bread and butter depend, in one way or another, on defense production.

The Senator from Missouri does not conclude that we are condemned forever to build defense system on defense system while we skimp on our domestic needs, but he offers a timely warning that this will happen unless we act now to redress the balance between the forces in our society which favor more military production and those which favor domestic development.

I ask unanimous consent that Senator EAGLETON's speech, delivered in Washington, Mo., on February 1, be printed in the RECORD.

There being no objection, the speech was ordered to be printed in the RECORD, as follows:

SPEECH BY SENATOR THOMAS F. EAGLETON, JUNIOR CHAMBER OF COMMERCE DINNER, WASHINGTON, MO., FEBRUARY 1, 1969

Karl Marx and George Orwell, between them, managed to convince a lot of people—followers and critics alike—that war and prosperity go together in a capitalist society.

Not so. The Vietnam war, far from contributing to the economic health of America, has brought rapid inflation and stilted priorities. Just read this week's headlines about the biggest consumer price increase in 17 years . . . which has priced many American goods out of the international market and caused the smallest trade surplus in three decades.

As the President's Cabinet Coordinating Committee on Economic Planning for the End of Vietnam Hostilities stated:

"Although the American economic system demonstrated the strength and adaptability necessary to carry the extra load without major disruption and without jeopardizing its fundamental health, the cost of war has been a load for the economy to carry—not a supporting 'prop.' Prosperity has not depended on the defense buildup and will not need high military spending to support it in peacetime. On the contrary, peace will provide the Nation with welcome opportunities to channel into civilian use manpower and material resources now being devoted to war."

With a flicker of hope for peace now evident in Paris, I want to talk a little tonight about those welcome opportunities . . . and to raise a serious question as to whether we are indeed prepared to seize them.

The great challenge after past wars has been to keep our economy moving when defense spending and defense production suddenly let up. And we have usually failed to meet that challenge.

The end of the Korean War in 1953 saw the beginning of a major recession. By mid-1954, the gross national product had fallen by 3.7 per cent and industrial production

had dropped off sharply by 9 per cent. Unemployment, after remaining at an exceptionally low level for two years, nearly trebled—from 2.4 per cent in August of 1953 to 6.4 per cent in March of 1954.

The economic outlook for the post-Vietnam period is much more hopeful.

For one thing, we have learned some lessons about the need to plan in advance for reconversion. The Arms Control and Disarmament Agency has prepared 26 major planning documents on aspects of economic reconversion. Moreover, while the impact of the war has been substantial, the economic drain of Vietnam still represents only three per cent of our GNP. And this impact has been widely diffused among all states and most industries. As the President's Coordinating Committee states: "Only a relatively small number of areas and industries are likely to be specially affected by the demobilization or to encounter significant transitional problems."

So I believe that our dynamic free enterprise economy can and will make a prompt and healthy adjustment to peace. As a nation, we will be richer.

But this brings me to a much more profound question: Do we have the ability and foresight not only to keep our great economic engine running, but to redirect it to serve the urgent needs of peace?

Believe me, there will be nothing automatic about transferring military expenditures to peaceful uses, at home or abroad, when the war in Vietnam is over.

The pressure will be enormous to keep those defense plants humming . . . to keep those workers on the job and doing pretty much what they are doing today . . . to prevent a reduction in our 89 billion dollar defense budget.

Plans for super new defense systems will be ripped off the Pentagon drawing boards and taken to the Congressional Defense and Appropriations Committees before the first troop ship reaches San Francisco.

And there will be plenty of contractors and workers, legitimately concerned about their economic future, who will be ready to testify for them.

When the industries and businesses that fill military orders are the largest producers of goods and services in the United States today . . . when their activities pour about 45 billion dollars into over 5,000 cities and towns . . . when they employ more than one American worker out of ten—the economic momentum of war production will not easily be deflected.

In addition, there is the raw political fact that there are 991 separate defense industry installations in 363 of the country's 435 congressional districts—and these plants are full of worried constituents.

Call this the "military-industrial complex" if you will. But remember that you are talking not about a coterie of skulking warmongers, but a sizeable portion of the American population whose legitimate personal interests will make them want to keep on doing what comes naturally in defense production when the war ends. It will take nothing short of a national act of will to shift a meaningful share of our resources from war-making to peace-building—at home and in the world.

"It is an unfortunate fact," said John F. Kennedy, "that we can secure peace only by preparing for war." And it is quite obvious that major cuts in defense spending will be impossible for the foreseeable future.

But the fact remains that since 1945 the United States of America has spent 936 billion federal dollars on the military—and only 115 billion dollars on education, health, welfare, housing and community development combined.

These domestic challenges are no less grave than threats from foreign enemies.

Nor is meeting them less critical for America's future.

But even though there is profit in peace . . . even though a civilian worker produces more, earns more and buys more than a man in uniform . . . there is no "education-industrial complex" . . . or "housing-industrial complex" . . . or "urban-development-industrial complex" presenting a meaningful counter-claim for public funds.

There are a variety of things we can do to avoid losing our post-war peace dividend by default.

Congress can and must begin to scrutinize the military budget. Senator Richard Russell, Chairman of the Senate Appropriations Committee, characterized our present tendency last year in these rich words:

"There is something about preparing for destruction that causes men to be more careless in spending money than they would be if they were building for constructive purposes. Why that is, I do not know; but I have observed, over a period of almost thirty years in the Senate, that there is something about buying arms with which to kill, to destroy, to wipe out cities, and to obliterate great transportation systems which causes men not to reckon the dollar cost as closely as they do when they think about proper housing and the care of the health of human beings."

The Administration can move forward now to seek Congressional approval of the nuclear non-proliferation treaty and speed up its timetable for meeting with the Soviet Union on general arms reductions.

But most important of all, the American public has to get angry about poor schools . . . about congested cities . . . about filthy air . . . about not enjoying the quality of life their prosperity should assure them. Somebody has to make an effective case for peace-building; and nobody but an aroused American public—you—can do it.

OUR 20TH CENTURY FOLLY

Mr. WILLIAMS of New Jersey. Mr. President, on September 18, 1967, over my objection, we capitulated to the interest of a few self-imposed guardians of our destiny by accepting the decision to deploy the limited ballistic missile defense system against the possibility of an attack by Chinese ballistic missiles. During the previous 8 years, two administrations considered and rejected suggestions that ongoing development programs for missile defense be followed by procurement of one system or another. At first it was a primitive Nike-Zeus missile. Such a system could have been built by 1963, but would have been obsolete by the time it became operational, according to the evaluation by no less than the Defense Department itself. A more advanced system, Nike X, could have been ordered in 1963 and built by this time, but even that system would have been obsolete by 1966.

These wise decisions have saved us at least \$20 to \$30 billion, the estimated cost for the implementation of these ABM proposals. And I do not see any reason to believe that the Sentinel system will not be obsolete 5 years from now—with a comparable waste of at least \$5 billion.

Mr. President, this is the beginning of our 20th century folly. I greatly fear that the decision to build this "light" ABM system is only paving the way for those who advocate a greatly expanded antimissile defense at an estimated cost exceeding \$40 billion.

This course of action is as irresponsible on fiscal grounds as it is pointless on military grounds. When the decision was made, the Defense Department admitted that it would be ineffective against the

Soviet Union, but said the decision was motivated instead by a fear of Chinese attack. What folly. We all know the basic technical fact is that this system can be easily neutralized by the Chinese by using relatively simple and cheap penetration aids or by developing different means of weapons delivery.

The logical conclusion of this development will be an accelerated arms race between the East and the West. Both sides place their defensive hopes on an offensive deterrent. If either side becomes convinced its offensive deterrent is no longer an adequate defense, that nation or nations will immediately accelerate its development of offensive weapons. The uncertainty involved in the nature of this reaction, and the likelihood of overreaction on both sides, pose great dangers to the stability of the nuclear balance—a danger too great to risk.

One of the biggest disappointments to me in the 90th Congress was our failure to ratify the Nuclear Nonproliferation Treaty. The indication is quite clear that the decision to build this Sentinel system was, in part, calculated to stimulate further discussion with the Soviet Union on the arms race. To this end, President Johnson persuaded the Soviet Union to agree to negotiate a treaty to ban such systems. The tool is available—now let us use it.

Mr. President, the implications and repercussions from this major policy decision are incalculable. Yet the average citizen is hardly aware of the problems involved, and the public debate, at least prior to the decision, was limited to a relatively small number of decision-makers. With few exceptions, even that debate rarely progressed beyond the technical and strategic realms. Our concern today is to assure this debate.

If this were a social program where one-hundredth of the cost were involved, there are those who would guarantee an endless debate. But, it is not—it is only a decision which perpetuates the tendency of our Government to be unrestrained and unreflective in expenditures of human and economic resources on defense. Why are we so unwilling to gamble with this kind of money where people are involved? Where is our equal enthusiasm for model cities, education, health, and other social and domestic problems? What has happened to our priorities?

Mr. President, the people of New Jersey are distressed and concerned about the possibility of locating part of this monster in two of their communities—Caven Point in Jersey City and Tenafla. We do not want them there; we do not have room for them there; and we want to be heard. If we can't stop this folly, at least we should be heard, for history should not judge us all by the decision of a select few.

Mr. PELL. Mr. President, I wholeheartedly associate myself with the views of the Senator from Kentucky as he has expressed them, as well as with those of the majority leader and the assistant majority leader.

I wish also to revert to the point raised by the Senator from Massachusetts (Mr. BROOKE) when he mentioned that

he had read the published report the Senator from Tennessee (Mr. Gore) and I made after our fairly long trip to The Prague and Moscow, when we had a fairly long conversation with Premier Kosygin, and the conclusions he drew from that report.

There is no question but that the Soviet leadership indicated, in every way they could, that they did want to get on with the discussion of disarmament. It would appear that they are a bit ahead of us when it comes to defensive weapons, and we are ahead of them with offensive weapons for that reason, they would like to get on to a discussion of the whole of both offensive and defensive missiles.

The point was also made in our discussion, which has not been particularly brought out publicly since, that Premier Kosygin emphasized he hoped that any negotiations would take place from positions of reasonable parity.

I think this was quite significant, in view of the context of the times. Perhaps just by remembering, that through modification in the use of the English language, we have seen "superiority" become "sufficiency," so, perhaps, "sufficiency" can, in turn, come to be considered a synonym for "reasonable parity."

In that case, there would be no reason why discussions could not move ahead more quickly than we have hoped thus far.

I think it is also striking, in that discussion, on which Senator Brooke touched, that the Premier referred, in positive, direct, and friendly terms, to our then President-elect Mr. Nixon. The ground could certainly be paved for disarmament discussions, from the viewpoint of us who spent almost 2 hours talking with Mr. Kosygin in his office.

Included in the general subject of the ABM is its development in the future. We are now dealing with a thin ABM, but the next stage beyond that would be a full scale ABM, and then the next stage beyond that, which we have not even thought about, would be the development of anti-ballistic-missile systems on the ocean floor, in the seabed, perhaps on the mid-Atlantic ridge. Thus we see the possibility of a whole new generation of weapons systems being developed; and it is to that point that I should like to address myself now, on a similar or parallel subject.

TREATY TO GOVERN THE ACTIVITIES OF NATIONS IN OCEAN SPACE

Mr. President, on January 21 of this year, I introduced Senate Resolution 33, containing a detailed set of legal principles for the governing of activities in the international marine environment, and urging the President of the United States to have these principles placed before the newly established United Nations Committee on the Peaceful Uses of the Seabed. Wishing to press this issue further, and hoping that the process between the adoption of a U.N. resolution on this matter and the formulation of an acceptable international agreement on ocean space can be accelerated, I have formulated my own set of legal principles into an actual draft treaty. I have incorporated this treaty proposal in a resolution, and I ask unanimous consent that it be printed in the Record.

The PRESIDING OFFICER. The resolution will be received and appropriately referred; and, under the rule, the resolution will be printed in the Record.

The resolution (S. Res. 92) was referred to the Committee on Foreign Relations, as follows:

S. RES. 92

Whereas the threat of anarchy is imminent in the field of scientific exploration and commercial exploitation of the deep sea and its resources; and

Whereas international agreement on a rule of law governing the activities of nations in the exploration and exploitation of the deep sea and its resources is in the common interest of all mankind: Now, therefore, be it

Resolved, That it is the sense of the Senate that the President should take all necessary steps, through the Secretary of State, the United States delegation to the United Nations, or any other appropriate agency or officer of the United States, to enter into negotiations with representatives of the governments of the major coastal and maritime nations and all other interested nations of the world to the end that there shall be concluded, with as widespread acceptance as is possible, a treaty on the peaceful exploration and exploitation of ocean space as follows:

"TREATY ON PRINCIPLES GOVERNING THE ACTIVITIES OF STATES IN THE EXPLORATION AND EXPLOITATION OF OCEAN SPACE

"PREAMBLE

"The States Parties to this Treaty,
"Inspired by the great prospects opening up before mankind as a result of man's ever-deepening probe of ocean space—the waters of the high seas, including the superjacent waters above the continental shelf and outside the territorial sea of each nation, and the seabed and subsoil of the submarine areas of the high seas outside the area of the territorial sea and continental shelf of each nation,

"Recognizing the common heritage of mankind in ocean space and the common interest of all mankind in the exploration of ocean space and the exploitation of its resources for peaceful purposes,

"Believing that the threat of anarchy exists in the exploration and exploitation of ocean space and its resources,

"Desiring to contribute to broad international cooperation in the scientific as well as the legal aspects of the exploration and exploitation of ocean space and its resources for peaceful purposes,

"Recalling the four conventions on the Law of the Sea and an optional protocol of signature concerning the compulsory settlement of disputes, which agreements were formulated at the United Nations Conference on the Law of the Sea, held at Geneva from 24 February to 27 April 1958, and were adopted by the Conference at Geneva on 29 April 1958,

"Recalling the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, which was unanimously endorsed by United Nations General Assembly resolution 2222 (XXI) of 19 December 1966 and signed by sixty nations at Washington, London, and Moscow on 27 January 1967, and considering that progress towards international cooperation in the exploration and exploitation of ocean space and its resources and the development of the rule of law in this area of human endeavor is of comparable importance to that achieved in the field of outer space,

"Recalling United Nations General Assembly resolution 2467A of 21 December 1968, which provided for the establishment of a Committee on the Peaceful Uses of the Seabed and Ocean Floor Beyond the Limits of National Jurisdiction, and the uses of their resources in the interests of mankind.

"Recognizing that the problems resulting from the commercial exploitation of ocean space are imminent,

"Believing that the living and mineral resources in suspension in the high seas, and in the seabed and subsoil of ocean space, are free for the use of all nations, subject to international treaty obligations and the conservation provisions of the four conventions on the Law of the Sea,

"Convinced that a Treaty on Principles Governing the Activities of States in the Exploration and Exploitation of Ocean Space will further the welfare and prosperity of mankind and benefit their national States,

"Have agreed as follows:

"PART I

"GENERAL PRINCIPLES APPLICABLE TO OCEAN SPACE

"Article 1

"The exploration and use of ocean space and the resources in ocean space shall be carried out for the benefit and in the interests of all mankind, and shall be the province of all mankind.

"Article 2

"Ocean space and the resources in ocean space shall be free for exploration and exploitation by all nations without discrimination of any kind, on a basis of equality of opportunity, and in accordance with international law, and there shall be free access to all areas of ocean space.

"Article 3

"Ocean space is not subject to national appropriation by claim of sovereignty, by means of use of occupation, or by any other means.

"Article 4

"There shall be freedom of scientific investigation in ocean space and States Parties to the Treaty shall facilitate and encourage international cooperation in such investigation, but no acts or activities taking place pursuant to such investigation shall constitute a basis for asserting or creating any right to exploration or exploitation of ocean space and its resources.

"Article 5

"States Parties to the Treaty shall carry on activities in the exploration and exploitation of ocean space and its resources in accordance with international law, including the Charter of the United Nations, and the provisions contained in these articles, in the interest of maintaining international peace and security and promoting international cooperation and understanding.

"Article 6

"States Parties to the Treaty shall bear international responsibility for national activities in ocean space, whether carried on by governmental agencies or non-governmental entities or nationals of such States, and for assuring that national activities are carried on in conformity with the provisions set forth in this Treaty. The activities of non-governmental entities and nationals of States in ocean space shall require authorization and continuing supervision by the appropriate State Party to the Treaty. When activities are carried on in ocean space by an international organization, responsibility for compliance with this Treaty shall be borne by the International organization itself.

"Article 7

"In the exploration of ocean space and the exploitation of its resources, States Parties to the Treaty shall be guided by the principle of cooperation and mutual assistance and shall conduct all their activities in ocean space with due regard for the corresponding interests of all other States Parties.

"Article 8

"States Parties to the Treaty shall render all possible assistance to any person, vessel,

vehicle, or facility found in ocean space in danger of being lost or otherwise in distress.

"Article 9

"States Parties to the Treaty engaged in activities of exploration or exploitation in ocean space shall immediately inform the other States Parties or the Secretary General of the United Nations of any phenomena they discover in ocean space which could constitute a danger to the life or health of persons exploring or working in ocean space.

"PART II

"USE OF OCEAN SPACE EXCEPT SEABED AND SUBSOIL

"Article 10

"All States Parties to the Treaty shall have the right for their nationals to engage in fishing, aquaculture, insolution mining, transportation, and telecommunication in the waters of ocean space beyond the territorial seas of any State.

"Article 11

"The right declared in Article 10 shall be subject to the treaty obligations of each State Party to the Treaty and to the interests and rights of coastal States and shall be conditioned upon fulfillment of the conservation measures required in the agreement entitled "Convention on Fishing and Conservation of the Living Resources of the High Seas", adopted by the United Nations Conference on the Law of the Sea at Geneva on 29 April 1958.

"Article 12

"Any disputes which may arise between States Parties to the Treaty with respect to fishing, aquaculture, in-solution mining, conservation, and transportation activities in the high seas shall be settled in accordance with all the provisions of the convention referred to in Article 11 setting forth a compulsory method for the settlement of such questions. The provisions of Article 27 and Annex 4 of the International Telecommunication Convention, signed at Geneva on December 21, 1959, shall be applicable to any disputes which may arise between States Parties with respect to telecommunication activities in the high seas.

"PART III

"USE OF SEABED AND SUBSOIL OF OCEAN SPACE

"Article 13

"In order to promote and maintain international cooperation in the peaceful and orderly exploration, and exploitation of the natural resources, of the seabed and subsoil of submarine areas of ocean space, each State Party to the Treaty undertakes to engage in such exploration or exploitation only under licenses issued by a technically competent licensing authority to be designated by the United Nations and to be independent of any State.

"Article 14

"The natural resources referred to in this Part consist of the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species, that is to say, organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil.

"Article 15

"The activities of nationals and non-governmental entities in the exploration of submarine areas of ocean space and the exploitation of the natural resources of such areas shall require authorization and continuing supervision by the appropriate State Party to the Treaty, and shall be conducted under licenses issued to States Parties to the Treaty making application on behalf of their nationals and non-governmental entities. When such activities are to be carried on by an international organization, a license may be issued to such organization as if it were a State.

"Article 16

"It shall be the duty of the licensing authority referred to in Article 13 to act as promptly as possible on each application for a license made to it. In issuing licenses and prescribing regulations, the licensing authority shall apply all relevant provisions set forth in this Treaty, shall give due consideration to the potential impact on the world market for each resource to be extracted or produced under such license, and shall apply the following criteria:

"(a) The license issued by the licensing authority shall (i) cover an area of such size and dimensions as the licensing authority may determine, with due regard given to providing for a satisfactory return of investment, (ii) be for a period of not more than fifty years, with the option of renewal, provided that operations are conducted with the approval of the licensing authority, (iii) require the payment to the licensing authority of such fee or royalty as may be specified in the lease, (iv) require that such lease will terminate within a period of not more than ten years in the absence of operations thereunder unless the licensing authority approves an extension of the period of such license, and (v) contains such other reasonable requirements as the licensing authority may deem necessary to implement the provisions of this Treaty and to provide for the most efficient exploitation of resources possible, consistent with the conservation of and prevention of the waste of the natural resources of the seabed and subsoil of ocean space.

"(b) If two or more States Parties to the Treaty apply for licenses to engage in the exploration of the seabed and subsoil of ocean space or the exploitation of its natural resources in the same area or areas of ocean space, the licensing authority shall, to the greatest extent feasible and practicable, encourage cooperative or joint working relations between such States and be guided by the principle that ocean space shall be free for use by all States, without discrimination of any kind, on a basis of equality of opportunity. But, if it proves impractical for the license to be shared, the licensing authority shall determine which State Party to the Treaty shall receive the license with due regard given to the encouragement of the development of the technologically developing States.

"(c) A coastal State has a special interest in the conservation of the natural resources of the seabed and subsoil of ocean space adjacent to its territorial sea and continental shelf and this interest shall be taken into account by the licensing authority.

"(d) A coastal State is entitled to take part on an equal footing in any system of research and regulation for purposes of conservation of the natural resources of the seabed and subsoil of ocean space in that area, even though its agencies or nationals do not engage in exploration there or exploitation of its natural resources.

"(e) The exploration of the seabed and subsoil of ocean space and the exploitation of its natural resources must not result in any unjustifiable interference with navigation, fishing, or the conservation of the living resources of the sea, nor result in any interference with fundamental oceanographic or other scientific research carried out with the intention of open publication.

"(f) A State or international organization holding a license is obliged to undertake, in the area covered by such license, all appropriate measures for the protection of the living resources of the sea from harmful agents and shall pursue its activities so as to avoid the harmful contamination of the environment of such area.

"Article 17

"1. Subject to appropriate regulations prescribed by the licensing authority referred to in Article 13 and to the following

provisions, a State or international organization holding a license shall be entitled to construct and maintain or operate on the seabed and subsoil of ocean space installations and other devices necessary for its exploration and the exploitation of its natural resources, and to establish safety zones around such installations and devices and to take in those zones measures necessary for their protection.

"2. The safety zones referred to in this Article may extend to a distance of 500 metres radius around the installations and other devices which have been erected, measured from each point of their outer edge. Ships of all nationalities must respect these safety zones.

"3. Such installations and devices do not possess the status of islands and have no territorial sea of their own.

"4. Due notice must be given of the construction of any such installations, and permanent means for giving warning of their presence must be maintained. Any installations which are abandoned or disused must be entirely removed by the State or international organization responsible for its construction.

"5. Neither the installations or devices, nor the safety zones around them, may be established where interference may be caused to the use of recognized sea lanes essential to international commerce and navigation.

"Article 18

"To the greatest extent feasible and practicable, the licensing authority referred to in Article 13 shall disseminate immediately and effectively information and data received by it from license owners regarding their activities in ocean space.

"Article 19

"If a State Party to the Treaty has reason to believe that an activity or experiment planned by it or its nationals or non-governmental entities under a license issued pursuant to this Part would cause potentially harmful interference with activities of other States Parties in the peaceful exploration and exploitation of ocean space, it shall undertake appropriate international consultations and obtain the consent of the licensing authority referred to in Article 13 before proceeding with such activity or experiment. A State Party to the Treaty which has reason to believe that an activity or experiment planned by another State Party would cause potentially harmful interference with activities in the peaceful exploration and exploitation of submarine areas of ocean space may request consultation concerning the activity or experiment and submit a request for consideration of its complaint to the licensing authority, which may order that the activity or experiment shall be suspended, modified, or prohibited. Review of any such order shall be allowed in accordance with the provisions of Article 24.

"Article 20

"All stations, installations, equipment, and sea vehicles, machines, and capsules used on the seabed or in the subsoil of ocean space, whether manned or unmanned, shall be open to representatives of the licensing authority referred to in Article 13, except that if there is objection to this procedure by the licensee, such facilities shall be open only to the Sea Guard of the United Nations as set forth in Article 27 of this Treaty.

"Article 21

"Whenever a State Party to the Treaty or an international organization fails to comply with any of the provisions of a license issued to it under this Part, such license may be canceled by the licensing authority referred to in Article 13, upon thirty days notice to the State or international organization concerned, but subject to the right of the license owner to correct any failure of compliance within a reasonable period of time to be specified by the licensing author-

ity, and, in any event, to request review of the decision of the licensing authority as set forth in Article 24.

"Article 22

"Any dispute which may arise under this Part between States or international organizations holding licenses, or between license owners and the licensing authority referred to in Article 13, shall first be submitted for settlement by the licensing authority which shall determine its own procedure, assuring each party a full opportunity to be heard and to present its case.

"Article 23

"In all cases of disputes under this Part, whether among license owners or between license owners and the licensing authority referred to in Article 13, the licensing authority shall be empowered to make awards.

"Article 24

"1. In the case of any dispute under this Part, if the licensing authority shall not have rendered its decision within a reasonable period of time or if any party to a dispute under this Part desires review of the decision of the licensing authority, such dispute shall, at the request of any of the parties, be submitted to a standing review panel which shall consist of not more than three members to be appointed by the International Court of Justice. The decision of the licensing authority shall be final and binding upon all parties to a proceeding before it unless a request for a review of such decision is made under this Article within a period of thirty days from receipt by such parties of notice of such decision.

"2. No two members of the panel may be nationals of the same State. No member may participate in the decision of any case if he has previously taken part in such case in any capacity or if he is a national of any party involved in the case.

"3. Members of the panel shall serve at the pleasure of the International Court of Justice. The Court shall fix the salaries, allowances, and compensation of members of the panel. The expenses of the panel shall be borne by each party to proceedings before the panel in such a manner as shall be decided by the Court.

"4. The panel shall determine its own procedure, assuring each party to the proceeding a full opportunity to be heard and to present its case.

"5. The panel shall hear and determine each case within a period of ninety days from receipt of a request for review of such case, unless it decides, in case of necessity, to extend the time limit for a period not exceeding thirty additional days. The decision of the panel shall be by majority vote and shall be final and binding upon the parties to the proceeding; except that if any party to the proceeding desires review of the decision, or if the panel has failed to render its decision within the period prescribed in the preceding sentence, the case shall be within the compulsory jurisdiction of the International Court of Justice as contemplated by paragraph 1 of Article 36 of the Statute of the International Court of Justice, and may accordingly be brought before the Court by an application made by such party.

"PART IV

"USE OF SEABED AND SUBSOIL OF OCEAN SPACE FOR PEACEFUL PURPOSES ONLY

"Article 25

"1. The seabed and subsoil of submarine areas of ocean space shall be used for peaceful purposes only.

"2. The prohibitions of this Part shall not be construed to prevent—

"(A) the use of military personnel or equipment for scientific research or for any other peaceful purpose;

"(B) the temporary use or stationing of any military submarines on the seabed or subsoil of ocean space if such submarines are

not primarily designed or intended for use or stationing on the seabed or subsoil of ocean space; or

"(C) the use or stationing of any device on or in the seabed or subsoil of ocean space which is designed and intended for purposes of submarine or weapons detection, identification, or tracking.

"Article 26

"1. Each of the States Parties to this Treaty undertakes to refrain from the placement or installation on or in the seabed or subsoil of ocean space of any objects containing nuclear weapons or any kinds of weapons of mass destruction, or the stationing of such weapons on or in the seabed or subsoil of ocean space in any other manner.

"2. Each of the States Parties to this Treaty undertakes furthermore to refrain from causing, encouraging, or in any way participating in the conduct of the activities described in paragraph 1 of this Article.

"Article 27

"All stations, installations, equipment, and sea vehicles, machines, and capsules, whether manned or unmanned on the seabed or in the subsoil of ocean space shall be open to representatives of other States Parties to the Treaty on a basis of reciprocity, but only with the consent of the State concerned. Such representatives shall give reasonable advance notice of a projected visit in order that appropriate consultations may be held and that maximum precautions may be taken to assure safety and to avoid interference with normal operations in the facility to be visited. All such facilities shall be open at any time to the Sea Guard of the United Nations referred to in Part VII of this Treaty, subject to the control of the Security Council as set forth in such Part.

"PART V

"REGULATIONS ON THE DISPOSAL OF RADIOACTIVE WASTE MATERIAL IN OCEAN SPACE

"Article 28

"The disposal of radioactive waste material in ocean space shall be subject to safety regulations to be prescribed by the International Atomic Energy Agency, in consultation with the licensing authority referred to in Article 13 of this Treaty.

"Article 29

"In the event of the conclusion of any other international agreements concerning the use of nuclear energy, including the disposal of radioactive waste material, to which all of the States Parties to the Treaty are parties, the rules established under such agreements shall apply in ocean space.

"PART VI

"LIMITS OF CONTINENTAL SHELF

"Article 30

"In order to assure freedom of the exploration and exploitation of ocean space and its resources as provided in this Treaty, there is a clear necessity that fixed limits must be set for defining the outer boundaries of the continental shelf of coastal States. For the purpose of the provisions of this Treaty, the term 'continental shelf' is used as referring (a) to the seabed and subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea to a depth of 550 metres, or to a distance of 50 miles from the baselines from which the breadth of the territorial sea is measured, whichever results in the greatest area of continental shelf, and (b) to the seabed and subsoil of similar submarine areas adjacent to the coasts of islands. In no case, however, shall the continental shelf be considered for such purpose to encompass an area greater than the area (exclusive of territorial sea) of the State or island to which it is adjacent. Recognizing the desirability of achieving agreement on unsettled questions relating to defining the boundaries of the continental shelf, States Parties to the Treaty undertake

to accept any agreements which may be reached in the event a conference is convened to consider such questions as provided for in Article 13 of the Convention on the Continental Shelf, adopted at Geneva on 29 April 1958; and any agreement so reached shall become effective for purposes of this Treaty when approved by the conference.

"PART VII

"SEA GUARD

"Article 31

"In order to promote the objectives and ensure the observance of the provisions set forth in this Treaty, States Parties to the Treaty agree that there shall be established as a permanent force a Sea Guard of the United Nations which may take such action as may be necessary to maintain and enforce international compliance with these principles.

"Article 32

"The Sea Guard shall be under the control of the Security Council of the United Nations, in consultation with the licensing authority referred to in Article 13 of this Treaty. Paragraph 3 of Article 27 of the Charter of the United Nations shall be applicable to decisions of the Security Council made with respect to the Sea Guard. The licensing authority shall be responsible under the Security Council for the supervision of the Sea Guard in connection with the performance by the Sea Guard of such duties as the licensing authority may deem appropriate to assign or delegate to the Sea Guard for purposes of the implementation of Part III of this Treaty.

"Article 33

"States Parties to the Treaty are encouraged to provide to the Sea Guard such personnel and suitable scientific and sea patrol vessels as are necessary for the establishment and maintenance of the Sea Guard.

"PART VIII

"NATIONAL LAWS TO APPLY TO CRIMES IN OCEAN SPACE PENDING INTERNATIONAL AGREEMENT ON CODE OF CRIMINAL LAW

"Article 34

"Pending agreement upon an international code of law governing criminal activities in ocean space and the institution of an appropriate tribunal with jurisdiction over violations of such code of law, personnel of States Parties to the Treaty and nongovernmental entities of State Parties and international organizations engaged in activities of exploration or exploitation in ocean space shall be subject only to the jurisdiction of the State of which they are nationals or the State which bears responsibility for their activities in respect of all acts or omissions occurring while they are in ocean space, unless otherwise provided for by international law or in this Treaty.

"PART IX

"FINAL ARTICLES

"Article 35

"1. The provisions of this Treaty shall apply to the activities of States Parties to the Treaty in the exploration and exploitation of ocean space, whether such activities are carried on by a single State Party to the Treaty or jointly with other States, including cases where they are carried on within the framework of international intergovernmental organizations.

"2. Any practical questions arising in connection with activities carried on by international intergovernmental organizations in the exploration and exploitation of ocean space, shall be resolved by the States Parties to the Treaty either with the appropriate international organization or with one or more States members of that international organization, which are Parties to this Treaty.

"Article 36

"1. This Treaty shall be open to all States for signature. Any State which does not sign

this Treaty before its entry into force in accordance with paragraph 3 of this Article may accede to it at any time.

"2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Government of the United States of America, the United Kingdom of Great Britain and Northern Ireland, and the Union of Soviet Socialist Republics, which are hereby designated the Depositary Governments.

"3. This Treaty shall enter into force upon the deposit of instruments of ratification by ten Governments including the Governments designated as Depositary Governments under this Treaty.

"4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Treaty, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

"5. The Depositary Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification and accession to this Treaty, the date of its entry into force and other notices.

"6. This Treaty shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

"Article 37

"Any State Party to the Treaty may propose amendments to this Treaty. Amendments shall enter into force for each State Party to the Treaty accepting the amendments upon their acceptance by a majority of the States Parties to the Treaty and thereafter for each remaining State Party to the Treaty on the date of acceptance by it.

"Article 38

"Any State Party to the Treaty may give notice of its withdrawal from the Treaty one year after its entry into force by written notification to the Depositary Governments. Such withdrawal shall take effect one year from the date of receipt of this notification.

"Article 39

"This Treaty, of which the English, Russian, French, Spanish, Chinese, and Arabic texts are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of this Treaty shall be transmitted by the Depositary Governments to the Governments of the signatory and acceding States.

"In witness whereof the undersigned, duly authorized, have signed this Treaty.

"Done in triplicate, at the capital cities of the Depositary Governments at Washington, Moscow, and London, this ____ day of ____ one thousand nine hundred and ____.

"For the United States of America:

"For the Union of Soviet Socialist Republics:

"For the United Kingdom of Great Britain and Northern Ireland:"

Mr. PELL. In taking this course of action with a view to expediting international agreement on the use of the world ocean, I have been criticized by those who maintain that our present knowledge of ocean space is inadequate in terms of formulating sound legal principles for the establishment of an effective international regime. In this regard, some maintain that consideration of a legal framework for the development of ocean space must await further investigation and study, if not the complete findings of the proposed International Decade of Ocean Exploration, scheduled to begin in 1970.

In response to this view, I would like to reiterate a point which I have tried to make on several previous occasions: Science and technology incorporate in-

terrelated processes which cannot be legitimately divorced from the political and diplomatic considerations to which they give rise. With respect to ocean space, it is clearly evident that diplomacy is being outpaced and international relations are being dangerously strained by the speed at which scientific and technological achievements are occurring.

Looking to recent events, I would inquire, was it necessary to orbit the moon before declaring, "The exploration and use of outer space shall be carried out for the benefit and in the interest of all countries"? Or was it necessary to probe Antarctica's storehouse of secrets before agreeing that this area shall be used exclusively for peaceful purposes?

While recognizing that the problems of Antarctica and outer space differ considerably from those of the oceans, I would urge, nevertheless, that the analogy is compelling and the need is strikingly similar.

At the risk of oversimplifying the major political issues involved in the ocean space question, I would offer two as being of overriding concern: First, how many nations will benefit from the exploitation of ocean space? recognizing the preponderant position of the United States and the Soviet Union in the field of applied marine technology, and, as a result, the present inclination of several coastal States to extend their national jurisdiction seaward; and second, will this new environment become a spawning ground for still another generation of weapons of mass destruction? Combining these two questions, and being more direct, if not blunt, I would ask, do the technologically advanced nations—particularly the nuclear powers—believe that a new colonial era cast in cold war terms can be avoided without the establishment of a meaningful international arrangement to guarantee the orderly and peaceful development of this last frontier?—a frontier encompassing 71 percent of the globe—a portion of the globe rich in resources, which will be mined, farmed, and developed for all mankind, and made the subject of numerous quarrels and battles if we do nothing about it.

At this point, Mr. President, I think it is important to make reference to former Secretary of Defense Clark Clifford's budget statement of January 15, 1969; in that statement Mr. Clifford pointed out:

We are requesting \$20 million—

And \$20 million is nothing compared with the ABM we have been talking about, but it is still an awful lot of money in my State, or any other State—in the FY 1970 budget to prepare for possible engineering development in FY 1971 of a new Undersea Long-Range Missile System (ULMS).

This is another antonym we are going to have to get used to using—ULMS.

(About \$5 million was provided in FY 1969 to initiate a study of such a system.)

Along this same line, I do not think it staggers the imagination to suggest that the Soviet Union is at least contemplating similar developments.

In this regard, I might say that I am strongly convinced that, unless action is

taken immediately to ensure against such developments, the nuclear arms race will be shifted to the marine environment. One particularly hopeful sign is the recent placing of this issue on the agenda of the 18-nation Disarmament Committee; this committee is scheduled to meet in early March, and I would hope that President Nixon would take advantage of this opportunity and would pursue it with all of the intensity and vigor which a new administration has at its command. Hence, I would hope that the real goal of halting the nuclear arms race is not lost in empty concepts reminiscent of Social Darwinism, such as "survival of the fittest" or its modern version, "survival of the superior."

Mr. President, in offering these inquiries and observations with a view to the future development of ocean space, I am suggesting only that knowledge cannot be substituted for the will to develop this frontier region in a peaceful and orderly manner—one which will take account of the responsibilities, the needs, the aspirations, and the limitations of all the nations of the world. Thus, as we ponder the vast potential of this last frontier, we would do well to remind ourselves that, unless our will is commensurate with our knowledge, international cooperation and understanding shall continue to be burdened with suspicion and mistrust.

In offering a draft treaty on ocean space, I have been guided by the principle that the international marine environment must be recognized as the legacy of all mankind. The principle was first enunciated more than 2 years ago by former President Johnson when he declared:

We must ensure that the deep seas and the ocean bottoms are, and remain, the legacy of all human beings.

Official U.S. statements on this issue at the United Nations have consistently endorsed this principle.

Accordingly, my treaty proposal seeks to guarantee that ocean space will be explored and exploited in the interests of all mankind, that it will be free from national appropriation, that it will be devoid of a new generation of weapons of mass destruction; that it will be immune from atomic wastes and other pollutants, and that it will be developed in accordance with and respect for existing international law and the Charter of the United Nations. To give added meaning to these principles, I have suggested in my draft treaty the establishment of an international authority to license all exploration and exploitation of the ocean space environment; in addition, I have recommended the creation of an international Sea Guard to insure compliance with these principles and to work in concert with licensing authority.

Mr. President, in proposing this treaty, I have attempted to give solid meaning to the conviction that, unless man is forever to be a slave to his own technology, his political and diplomatic successes must march at least abreast of his technological achievements.

Critics of this thought have stated that the national interest of the United States in terms of the development of ocean space demands that our potential under-

sea technological capability not be fettered by international political considerations.

In reply to this contention, I should like to recall some rather memorable words of the late Dag Hammarskjöld:

The question is not *either* the nation or the world. It is, rather, how to serve the world by service to our nation, and how to serve the nation by service to the world.

Thus, we must strive to understand the national interest in terms of the larger, more comprehensive international interest; this is the democratic imperative cast in a worldwide setting, and it is in this context that the development of ocean space must be charted.

In some respects, Mr. President, a hopeful beginning has been made: The last session of the General Assembly witnessed the creation of the United Nations Committee on the Peaceful Uses of the Seabed; in our own country, the President's Commission on Marine Science, Engineering, and Resources has issued its report, urging that the United States take the initiative in trying to reach worldwide agreement on a new international regime for the marine environment. In this regard, the Commission specifically cautions:

Unless a new international framework is devised which removes the legal uncertainty from mineral resources exploration and exploitation in every area of the seabed and its subsoil, some venturesome governments and private entrepreneurs will act to create *fais*

accomplis that will be difficult to undo, even though they adversely affect the interests of the United States and the international community.

In closing, Mr. President, let me express the belief that, as the major power in undersea technology, the United States has a special responsibility, one which demands that its diplomatic posture be as achievement oriented as that of its military-industrial complex. Such a posture clearly requires an unrelenting desire to establish an international framework which will guarantee the peaceful and orderly development of the extra-national marine environment.

I offer this resolution in the hope that it may help to spark such a desire.

ADJOURNMENT UNTIL FRIDAY, FEBRUARY 7, 1969

Mr. KENNEDY. Mr. President, if there be no further business to come before the Senate today, I move, in accordance with the previous order, that the Senate stand in adjournment until 12 o'clock noon on Friday next.

The motion was agreed to; and (at 6 o'clock and 53 minutes p.m.) the Senate adjourned until Friday, February 7, 1969, at 12 o'clock meridian.

NOMINATIONS

Executive nominations received by the Senate February 4, 1969:

DEPARTMENT OF STATE

Martin J. Hillenbrand, of Illinois, a Foreign Service officer of the class of career minister, to be an Assistant Secretary of State.

FEDERAL MEDIATION AND CONCILIATION DIRECTOR

James C. Counts, of California, to be Federal Mediation and Conciliation Director.

FARMERS HOME ADMINISTRATION

James V. Smith, of Oklahoma, to be Administrator of the Farmers Home Administration.

IN THE ARMY

The following-named officer to be placed on the retired list in grade indicated under the provisions of title 10, United States Code, section 3962:

To be Lieutenant general

Lt. Gen. William Frederick Cassidy, O18354, Army of the United States (major general, U.S. Army).

Maj. Gen. Frederick James Clarke, O20572, U.S. Army, for appointment as Chief of Engineers, U.S. Army, under the provisions of title 10, United States Code, section 3036.

The following-named officer under the provisions of title 10, United States Code, section 3066, to be assigned to a position of importance and responsibility designated by the President under subsection (a) of section 3066, in grade as follows:

Maj. Gen. Frederick James Clarke, O20572, U.S. Army, in the grade of Lieutenant general.

DEPARTMENT OF STATE

Joseph John Sisco, of Maryland, a Foreign Service officer of the class of career minister, to be an Assistant Secretary of State.

Samuel De Palma, of Maryland, a Foreign Service officer of class 1, to be an Assistant Secretary of State.

Clifford Sees Missile Lead Ending in '69

By George C. Wilson
Washington Post Staff Writer

A "large increase" in heavily protected ICBMs was "the most significant development" of 1968 in Soviet strategic weaponry, Defense Secretary Clark M. Clifford said yesterday.

In his only "posture" statement on the world military situation and Pentagon plans for dealing with it, Clifford said the Soviet Union will catch up to the United States by the end of this year in ICBMs, with each side having over 1000 buried underground and ready to fire.

While this closing of the missile gap numerically comes as no surprise, the Defense Secretary makes clear in his 165-page valedictory that the Soviets are advancing in quality, too. Also, their ICBM production is continuing while ours stopped at 1054 missiles.

President Nixon will have to decide what to do about it, with his main options being to match the Russians missile for missile or to improve the nu-

See WEAPONS, A6, Col. 1

WEAPONS, From A1

clear arsenal we already have deployed.

"We stand on the eve of a new round in the armaments race with the Soviet Union," Clifford said in taking note of the quickening pace of nuclear arms development on both sides.

He said running the race "will contribute nothing to the real security of either side, while increasing substantially the already great defense burdens on both."

Clifford urged his successors instead to "move cautiously forward with talks on strategic arms limitations" with the Soviet Union and to "move forward promptly on the ratification of the non-proliferation treaty" pending in the Senate.

Clifford said that such improvements in Soviet weaponry as a change from liquid fuel to high-energy solid fuel for ICBMs do not represent any Russian "shift in over-all policy." Nevertheless, he added, a missile treaty would reduce the threat to all mankind of a nuclear holocaust.

In the absence of such a treaty, his posture statement makes clear that the action-reaction phenomenon of arms building will be at work in several areas in fiscal 1970. Some examples in the strategic weapons field:

- SCAD — The U.S. with money in the new budget will start the development of a Subsonic Cruise Armed Decoy (SCAD) — a missile which would be fired from a bomber while the plane was out of range of the defenses. The SCAD would maneuver as it flew to the target to confuse the defense.

SCAD, if produced, would present Russia with the problem of improving its missile defenses around Moscow as well as the Tallinn bomber defense across the northeastern approaches to the country.

- Harder silos — Because Soviet ICBMs are getting better, the Pentagon 1970 budget contains \$58 million to make our underground silos for Minuteman ICBMs harder to destroy. The silos will also be enlarged for the new ICBM the U.S. has been working on. There is \$20 million in the new budget for this advanced ICBM still in the study stages. Also, the Pentagon is considering ringing ICBM sites with missiles to destroy the incoming ones.

- ULMS — This is the acronym for emplacing ICBMs in the ocean: Underwater Long-range Missile System. The purpose would be to make the ICBMs less vulnerable to improved Soviet missiles. \$20 million is in the budget for ULMS — which could end up as a super-sized Polaris submarine filled with ICBMs. ULMS is still in the study stage.

- Bomber defense — Clifford said that although it does not now appear that the Russians are building bombers that could reach the United States,

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China would start testing long-range missiles in 1967, the year the American ABM was started, Clifford said: "We now believe that an initial operating capacity with an ICBM will not be achieved (by China) until 1972 at the earliest, and more likely later."

Despite this lag, Clifford said "it is both prudent and feasible" to continue with Sentinel. He said China "could have a modest force of ICBMs sometime after the mid-1970s." He said an American ABM could save as many as 22 million of the 23 million who would be lost in a surprise Chinese ICBM attack.

Also, Clifford said the Sentinel "could serve as a base for a larger, more extensive system." Many critics claim this was the Johnson Administration's real reason for starting the anti-Chinese ABM, a foot-in-the-door approach for

Clifford Disturbed by Rise In Russian Missile Force

By WILLIAM BEECHER

Special to The New York Times

WASHINGTON, Jan. 18—Defense Secretary Clark M. Clifford has expressed "increasing concern" about the rapidly growing Soviet force of intercontinental missiles, which nearly quadrupled in two years and which is expected to exceed that of the United States this year or next.

But Mr. Clifford, in what amounted to a valedictory statement on the eve of leaving office, insisted that the United States remained stronger than any potential adversary. He said that his hopes for a peaceful world had been encouraged by Soviet willingness to discuss a halt in the arms race and by the shift in Vietnam emphasis from the battlefield to the conference table.

The Secretary is credited by many with having played the central role in turning the Johnson Administration's strategy from one based on gradual but steady escalation of force to one stressing de-escalation and negotiation. In remarks released today he said, "I think that we have now set a true course toward peace in Vietnam."

Mr. Clifford's views were contained in a detailed analysis of the outgoing

administration's final defense budget.

The analysis, which explores the rationale behind the country's national security policy and its weapons decisions, covers 165 pages in the unclassified version and more than 300 pages in the secret version.

The latter was sent to the armed services and military appropriations panel in the House and Senate today.

Mr. Clifford said the Russians had surpassed American intelligence estimate by moving from 250 ICBM's in mid-1966 to 900 by last September. Other sources say the Soviets now possess more than 1,000 ICBM's, having drawn roughly even with America's land-based force of 1,054 missiles.

While the Defense Secretary said he expected the Russians to continue to install even more such missiles, he predicted that "the rate of increase will be considerably smaller over the next two or three years."

Solid Fuel Missiles

Mr. Clifford revealed that the Soviet Union had begun to deploy its first solid-fuel ICBM's, similar to the early Minuteman missile of the United States. The bulk of the Soviet missiles are liquid fueled.

He noted also that the Soviet Union was operating some nuclear-powered missile submarines similar to Polaris submarines with a missile range of more than 1,500 miles. But he credited the Russians with only 45 missiles on such submarines, compared with 656 on this nation's Polaris submarines.

Work on antimissile sites around Moscow slowed down last year, Mr. Clifford said, but research and development work on antimissile missiles continued "at a high rate of activity."

During the Presidential campaign,

Richard M. Nixon charged that a dangerous "security gap" was developing because of Soviet weapons advances in a number of fields, strategic and conventional.

Mr. Clifford acknowledged that the Russians were actively attempting to catch up with the number of land-based and seas-based missiles in the United States arsenal. But he insisted, in effect, that the Soviet suffered from a technology gap. The Russians are "still well behind us in advanced missile technology," he said.

The new Soviet solid-fuel missile is similar to the first Minuteman that was deployed about eight years ago, he said. The Russians nuclear submarine compares to the first U.S. ballistic missile submarine a decade ago, he said, and the

Soviet antimissile system appears to resemble the Nike-Zeus system that the United States "abandoned years ago because of limited effectiveness."

Edge Expected to Stay

Other officials say that multiple warheads on Minuteman 3 missiles, which the United States plans to start deploying during the next fiscal year, together with similar warheads on Poseidon missiles that are to be deployed later on should continue to give this nation an edge in the number of accurately deliverable warheads for some time to come.

These officials insist the Russians are lagging in multiple warhead technology, but by a few years rather than by several years.

Mr. Clifford repeated a theme associated with his predecessor, Robert S. McNamara. The number of warheads alone does not assure security, he said. Under this theory, to deter an enemy a nation must have enough secure weapons so that even after sustaining a surprise attack it can retaliate and kill tens of

millions of people in the homeland of the attacker.

Rather than see another upward spiral in the arms race, which Mr. Clifford said would increase insecurity, he called for negotiation of a "verifiable" agreement with the Soviet Union to limit strategic offensive and defensive forces.

On Vietnam, Mr. Clifford is known to have told associates in recent days that in his views, "the die is cast."

He considers it unthinkable that the Nixon Administration would break off Paris talks and consider either much larger troop levels or tough measures against North Vietnam, both of which were very much under consideration when he came into the Defense post last March.

Total Victory Ruled Out

The Secretary put it this way in his Congressional statement: "While we now cannot lose militarily, neither is total military victory within our grasp. That is why we are in Paris. That is also why the enemy is in Paris. Each side hopes to pursue its objectives at lower costs."

Mr. Clifford talked of two disquieting developments last year: The Soviet invasion of Czechoslovakia and the "smoldering conflict" in the Middle East, which he said the Soviet Union was supplying arms to Arab countries.

But he noted with seeming pleasure that Communist China's nuclear weapons program seems "to" be lagging behind schedule, as a result either of technical problems or effects of the cultural revolution. He said he still foresaw a "moderate" force of Chinese ICBM's by 1975.

Word of a slowdown in the Chinese nuclear missile effort will likely be used by Congressional opponents of the Sentinel missile defense system to attempt to block the \$1.5-billion

in appropriations this year for deployment of the system. The Sentinel plan is designed primarily to guard the country against the Chinese missile threat.

Mr. Clifford said that an adverse balance of payments problem attributable largely to the extensive foreign deployment of American troops was forcing Pentagon planners to contemplate cutbacks in administrative and support troops in Western Europe and in Japan and Okinawa.

There are plans to make "substantial savings" by closing post exchanges and consolidating certain headquarters in Europe, he said, but he gave no details.

Threat From Submarines

A growing Soviet submarine threat, Mr. Clifford said, is leading to a number of moves in the antisubmarine warfare field.

Last year's plan to cut back from six to five anti-submarine aircraft carriers has been scrapped. So, too, was a plan to phase down the number of antisubmarine patrol aircraft. Additional land-based patrol aircraft will be bought and a new carrier-based patrol plane will be developed, he said.

Also, the Secretary said, this Administration has decided to scrap Mr. McNamara's old plan to limit to 69 the number of

nuclear-powered attack submarines for the planned anti-U boat force. He said that plans were being made to buy a number of new types of faster and quieter nuclear-powered submarines, the first four of which are proposed in the new budget.

In two previous years the Pentagon has requested funds from the Congress for the first of 30 new fast deployment logistics ships designed to rush tanks and other heavy weapons to distant trouble spots where they would be used by air-lifted troops.

Both times Congress refused, partly because of fear that the ships in peacetime would compete with commercial cargo vessels and partly for fear that having such a capability might tempt some future Administration to try to police most of the world's crises.

A Clifford Compromise

As a compromise, Mr. Clifford seeks authority to build only 15 of these ships, relying on military charter of 30 smaller, specially built commercial vessels to provide the balance of the required capacity.

In other weapons decisions, the Defense Secretary disclosed that:

¶A new early warning satellite, designed to give instant

notice of the launching of an enemy ICBM, was being developed.

¶The Air Force was developing small, long-range decoys, called SCAD, that on enemy radar would look like big bombers and would thus draw the fire of enemy air defense missiles. The SCAD would also carry a nuclear warhead so that if it were not downed, it could destroy enemy targets.

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Should we not bear in mind an interesting closing line from a recent editorial in the Charleston (W. Va.) Gazette Mail:

History is littered with the corpses of empires guilty of hubris and felled by its consequences: the overexpansion of manpower and resources.

REASONS WHY THE ABM COULD WELL COST TENS OF BILLIONS OF DOLLARS MORE THAN CURRENTLY ESTIMATED

Mr. SYMINGTON. Mr. President, I ask unanimous consent to proceed for 5 minutes.

The VICE PRESIDENT. Without objection, it is so ordered.

Mr. SYMINGTON. Mr. President, last August, in debate on the Senate Floor about funds for construction of the Sentinel ABM system, there was the following colloquy between the distinguished majority leader and myself:

Mr. MANSFIELD. If what the Senator says is correct and it is intended eventually to spend in excess of \$6 billion to build a 'thin' ABM system, which we were told originally by Secretary McNamara, and since by his assistants, was for defense against China, but which we were told when the authorization bill was before the Senate some weeks ago was in effect for defense against the Soviet Union, does it not seem logical to assume, if that is the case, that \$6 billion-plus is just the first installment on a program which could eventually cost this country somewhere in the vicinity of from \$50 to \$70 billion?

Mr. SYMINGTON. I think it would be more than that. As but one example, take the F-111 planes. The original price on that plane was \$2.8 million. I asked last spring what 100 of them would actually cost, and was told \$15 million apiece. That is five times higher.

It is already admitted the thick line would cost \$40 to \$50 billion. Following the same character of extrapolation—and there are other items I could mention—it could cost at least \$100 billion.

Some of those who continue to support the production and deployment of this unprecedentedly complicated ABM system have challenged any possibility that the ultimate cost if extended to protect the United States against Soviet Russia as well as China, could be \$100 billion; but reasons outlined below show clearly that, based on the record, this "thick" Soviet system could cost tens of billions of dollars more than \$100 billion.

The estimated cost for the "thin" China system has already jumped from an original 1967 estimate of \$3.5 billion to \$5 billion in 1968; and is now closer to \$10 billion.

Recent testimony by a high official of the Department of Defense before the Joint Economic Committee confirms that this escalation in the cost of the ABM could well be just the beginning of a continuing series of upward revisions.

This testimony reported the fact that 12 major systems which were developed during the 1950's exceeded their original estimated cost by an average of 220 percent. And if the increase in the estimated cost of this highly complicated Sentinel thick system was nevertheless no more than this average, its cost would be \$160 billion.

But the most shocking, and incidentally the most recent, study referred to in said testimony, had to do with a report published by the Brookings Institution. This report said in part:

During the 1950's, virtually all large military contracts reflected an acceptance by the military agencies of contractor estimates which proved "highly optimistic." Such contracts ultimately involved costs in excess of original contractual estimates of from 300 to 700 percent.

Based on these studies, cited a few weeks ago by the Department of Defense itself in its logical defense of the relatively small additional cost incident to the production of the C-5A transport plane, it is within the range of possibility that the "thin" China system could conceivably cost the American taxpayer over \$40 billion; and the cost of the "thick" Soviet system could be over \$400 billion.

Let us note in passing, especially to those prone to accept, without question, all new weapons systems proposed by the military, that this latter figure is more than the current national debt.

How can the American people now be asked to bear such a gigantic additional burden in order to finance the production and development of a system whose operational capability its strongest proponents admit may not be adequate to do the job it is designed to do?

As I have often stated previously, I believe in and support, without reservation, the continuance of research and development on this new system, even though during recent years many billions of dollars have been expended on major missile systems that were never even placed into production; that is, were abandoned as obsolete or unworkable before the development work on them had been completed.

Let us note also that, according to Defense Department testimony given the Congress months ago, \$4.7 billion had at that time been spent in research and development effort on ground-to-air nuclear systems, including the Sentinel.

This heavy expenditure of our increasingly limited resources on missile systems that never advanced beyond the development stage is unfortunate; and in my opinion is but additional proof of the growing tendency in recent years for military research and development efforts to be directed toward solving theoretical problems rather than producing badly needed modern defense hardware. That in itself is one of the chief reasons why the Soviet Union is currently so far ahead of the United States in so many categories of modern conventional weapons.

Equally unfortunate is the fact that over \$15 billion of the taxpayers' money has been invested in missile systems once produced and deployed, but now abandoned, in many cases because in due course it was found they did not work.

Let us hope the above facts will be given careful consideration by those who, along with the multimillion-dollar public relations program apparently organized by the Defense Department to promote the Sentinel, currently support the deployment and production, now, of this ABM system.

In summary, even if the price was not so high, even if deployment of the Sentinel would not promote a new escalation in the arms race, I cannot support the deployment of this weapons system without further research and development because I do not believe, in its present form, it will work. This conviction is supported by many years of practical experience in the electronics industry prior to my coming into Government.

To produce and deploy this defense system now could be a nuclear-space age "followup" to the tragedy that was the maginot line.

Mr. KENNEDY. Mr. President, will the Senator from Missouri yield?

Mr. SYMINGTON. I am happy to yield to the distinguished Senator from Massachusetts.

Mr. KENNEDY. Mr. President, I want to commend the distinguished Senator from Missouri for addressing the Senate this afternoon, and for bringing to the Members of this body his thoughtful presentation.

The Senator from Missouri brings an extraordinary background to this whole debate on the question of the Sentinel ABM system.

He is a member of the Committee on Armed Services. He has particular responsibility given him by the Senate in the field of national security. He is also a member of the Committee on Foreign Relations and is very much aware of the latest thinking by that committee, and by responsible members of our Government concerning our relations with our adversaries—and our friends—beyond our borders.

Because of his long background and experience in the whole private sector, there are few Members of this body who can speak about the cost of such a weapons system with his background and experience.

The VICE PRESIDENT. The time of the Senator has expired.

Mr. KENNEDY. Mr. President, I ask unanimous consent to have 3 more minutes.

The VICE PRESIDENT. Without objection, it is so ordered.

Mr. KENNEDY. Mr. President, the Senator from Missouri has addressed this body at many different times on our fiscal and monetary position in the world, and is an authority on that problem. I think he really brings a great wealth of experience, which is extremely important and that the Members of this body should consider the comments he has made with great attention.

I should like to ask the Senator two very brief questions. The first is whether, in reaching the figure of some \$400 billion which he has suggested this afternoon, he has included in that figure any expenditures for fallout shelters. I think any kind of presentation which is made in support of a thin, or even a thick, ABM system relates to and is concerned with questions about fallout shelters. I was wondering whether an estimate for the cost of fallout shelters would be included in the \$400 billion, or whether such expenditures for fallout shelters, if we were to agree to a thick system, would be an add-on to the \$400 billion figure the Senator from Missouri has suggested.

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Mr. SYMINGTON. Mr. President, first, I would thank the distinguished assistant majority leader for his kind but undeserved remarks, and add that in this field it is a privilege to follow his leadership and that of others in questioning a system, the expense of which will make it very difficult to handle, problems we have in other international fields, as well as growing problems in the domestic field. Nevertheless, regardless of cost, if I believed this Sentinel system was vital to our security I would be for deploying it now. I do not so believe.

In reply to the distinguished Senator, I reached this possible figure by taking the high additional percentage of the Brookings Institution report; namely, 700 percent. It does not include shelters. Perhaps the most informative lay articles written on the Sentinel subject were those put into the Record by the distinguished senior Senator from Massachusetts on February 19, consisting of 12 articles, in which the estimated cost of the shelters was stated as being \$38 billion in total, as I remember. Based on all records of the past I would be surprised if the ultimate cost was not a good deal more than \$38 billion. My answer, therefore, is that I did not include shelter cost, and that would add heavily to the cost.

Mr. KENNEDY. My second question, Mr. President, relates to the probability of increased defense budgets that would result from a new round in the arms race, as former Defense Secretary indicated would be the case in his January defense posture statement. It is my opinion that the deployment of either a thick or a thin ABM system would signal such a new round in the arms race, but let us say it is a thick system.

The VICE PRESIDENT. The time of the Senator has expired.

Mr. KENNEDY. I ask unanimous consent for 2 additional minutes.

The VICE PRESIDENT. Without objection, it is so ordered.

Mr. KENNEDY. I refer to the development of MIRV's, the hardening of ICBM sites, the development of a new generation of ICBM's, and so forth. Does the Senator agree with me that this would run into additional expenditures as well, because once we move into an escalation in the arms race, in terms of a thick system, obviously it is going to take additional expenditures of at least hundreds of millions of dollars, and probably many billions of dollars, to make any kind of meaningful progress in terms of our defensive posture as well as offensive posture?

Mr. SYMINGTON. The able assistant majority leader is correct, although I am not opposed to all improvements in our offensive missile systems until we reach proper agreement. But I was a Member of the Senate during the so-called bomber gap of the early 1950's and during the so-called missile gap of the late 1950's. They just did not pan out. So this time I think this Congress should look carefully before deploying this new weapons system. It could mean the expenditure of tens, if not hundreds, of billions of dollars of additional money resulting from mutual escalation of the arms race.

In a statement I intend to put into the Record I present that the cost of running this Government today, the annual cost, is running tens of billions of dollars more than the gross national product of any other country of the free world.

Mr. COOPER. Mr. President, Senator SYMINGTON's statement on the enormous burden of costs that a decision to deploy an ABM system would bring to the people of the United States is very important to the Congress and the American people. His experience of over 30 years as an executive in the electronics industry, as Secretary of the Air Force, and as a ranking member of the Senate Armed Services Committee, gives him an expert knowledge of technological matters which few in the Senate can approach.

I know that Senator SYMINGTON would agree with me, that if deployment of an ABM system would bring genuine security to this country, he would support its installation no matter how great the cost. But what is at issue in this ABM debate is whether the United States will be made more secure as its proponents contend by deployment, or whether the deployment of the ABM will lead only to a more dangerous nuclear escalation and less security. Senator SYMINGTON's contribution on this important issue is of the greatest value.

DEPLOYMENT OF AN ABM SYSTEM

Mr. HART. Mr. President, normally we leave until the end of our remarks the request that there be printed in the Record an editorial, an article, or a letter. Today, I should like to switch the batting order, and ask unanimous consent that there be printed in the Record at this point a letter dated February 25, 1969, from 39 members of the University of Michigan Physics Department, bearing on the subject of the anti-ballistic-missile system.

There being no objection, the letter was ordered to be printed in the Record, as follows:

FEBRUARY 25, 1969.

Senator ROBERT GRIFFIN,
Senator PHILIP HART,
U.S. Senate,
Washington, D.C.

DEAR SENATORS GRIFFIN AND HART: Our government is presently reviewing its plans for the deployment of an anti-ballistic missile (ABM) system, and further argument undoubtedly will be made in the House and the Senate concerning this matter. We are convinced that the deployment of an ABM system would be a grave mistake either as a "thin" system for defense against the Chinese or as part of a more extensive system designed to withstand any form of nuclear attack. We would like you to consider the following arguments on which our case is based.

1. The so-called "thin" system was originally approved by Congress to provide a defense in the 1970's against a light attack by a relatively small nuclear power such as China might be at that time. We do not believe that the proposed system could provide us with this defense. It is relatively easy for the attacker to build penetration aids to fool the defense system. Such aids include multiple warheads, decoys, clouds of metal wire (chaff) to fog the defense's radar, etc. These and other methods are discussed in an article by H. A. Bethe and R. L. Garwin in Scientific American of March 1968. (Copy en-

closed.) It would be quite feasible and relatively inexpensive for the Chinese who are developing their offensive ICBM system at this time to incorporate such penetration aids into their system, and surely they would do so, knowing as they do the nature of the defense system they must overcome. For although it is conceivable (barely) that they might be sufficiently unreasonable to attack us with ICBM's (in spite of the full knowledge that we could and would eliminate them as a viable country if they did) it is inconceivable that they would do so without taking the relatively simple and inexpensive steps necessary to make sure such an attack would be effective.

2. Another argument put forward by proponents of a thin ABM system is that it would provide protection against the accidental firing of an ICBM by the Russians. It is argued that \$5 to \$10 billion is a relatively small price to pay for such protection. Those who argue in this way overlook one very important point. If the United States deploys an ABM system, then the Russians, or for that matter any other nation which considers us a threat, must modify their offensive missiles so as to give them a good chance of penetrating our defense. As we have said, such modifications are relatively easy. The technical advantage is always with the attacker. When such modifications were made (and they would undoubtedly proceed in parallel with our deployment of an ABM system) we would have to contend with the accidental launching of a missile equipped with multiple warheads, decoys, chaff, or whatever it takes to penetrate our ABM system. Thus in the end our cities would not be significantly better protected than they are at present.

It is important to note that the likelihood of an accidental launch by the Russians due to technical malfunction is comparable to the likelihood of an accidental explosion of one of our own missiles. Thus by surrounding our cities with nuclear tipped ABM's we are, if anything, increasing the probability of technical accident, either due to one of our own missiles or due to one of theirs.

Presumably, the chance of an accident on our part is very small. However, the damage it could cause is so great that we would have to consider ourselves in very great danger to want to take such a risk, particularly with a system that is not likely to be effective against the danger for which it is designed.

3. A third argument that we have heard in defense of an ABM system is that it would improve our over-all defense posture. This argument is put forward by those who see the thin system as the forerunner of a more extensive system costing many tens of billions of dollars. The trouble with this argument is that the cost of constructing any ABM system is very great compared to the cost of potential enemy must incur to redesign his offensive system to penetrate our defenses. Thus building an ABM system is a very inefficient way of improving our defense posture. It is too easily rendered useless by improvements in offensive weapons. Thus extensive expenditures by both sides lead to no relative improvement in either's position. Our country can ill afford to waste even \$5-10 billion on a thin system, let alone \$50-100 billion on the thick system which would be likely to follow.

4. In addition to these arguments, we have great doubts, of a purely technical nature, about the performance of any ABM system. It seems unlikely that a system of this complexity, if ever called upon, will perform with any high degree of success. The technical demands on a defensive system are much greater than those on an offensive or retaliatory system such as we have at present. Moreover, the necessary testing of the proposed system under realistic conditions seems impossible and therefore we have very grave doubts about its successful performance.

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We hope you are in agreement with us on these matters. We would appreciate any opportunity to discuss this further with you at your convenience. If we can be of any service to you in this matter we would be glad to cooperate.

A copy of this was signed by the following members of the Physics Department faculty, University of Michigan.

C. W. Akerlof, Asst. Prof. of Physics, J. Bardwick, Asst. Prof. of Physics, J. W. Chapman, Asst. Prof. of Physics, C. T. Coffin, Assoc. Prof. of Physics, D. M. Dennison, Prof. of Physics, H. A. Gould, Asst. Prof. of Physics, W. R. Gray, Asst. Prof. of Physics, W. E. Hazen, Prof. of Physics, K. T. Hecht, Prof. of Physics, A. Z. Hendel, Assoc. Prof. of Physics.

L. W. Jones, Prof. of Physics, G. L. Kane, Assoc. Prof. of Physics, S. Krimm, Prof. of Physics, A. D. Krisch, Prof. of Physics, O. Laporte, Prof. of Physics, R. R. Lewis, Prof. of Physics, M. J. Longo, Prof. of Physics, D. I. Meyer, Prof. of Physics, O. E. Overeth, Prof. of Physics, J. J. Reidy, Asst. Prof. of Physics.

A. L. Read, Assoc. Prof. of Physics, A. Rich, Asst. Prof. of Physics, R. T. Robiscoe, Asst. Prof. of Physics, B. P. Roe, Assoc. Prof. of Physics, M. H. Ross, Prof. of Physics, R. Roth, Lecturer in Physics, T. M. Sanders, Jr., Prof. of Physics, R. H. Sands, Prof. of Physics, D. A. Sinclair, Prof. of Physics, K. M. Terwilliger, Prof. of Physics.

R. S. Tickle, Prof. of Physics, J. C. Vander Velde, Prof. of Physics, G. Weinreich, Prof. of Physics, M. L. Wiedenbeck, Prof. of Physics, D. N. Williams, Asst. Prof. of Physics, W. L. Williams, Asst. Prof. of Physics, J. Ward, Assoc. Prof. of Physics, V. Wong, Lecturer in Physics, J. C. Zorn, Assoc. Prof. of Physics.

Mr. HART. Mr. President, the logic of this letter, to me, is irrefutable.

I share the physicists' view that it would be both feasible and inexpensive for either China or Russia to develop penetration aids for missiles which would negate any possible effectiveness of ABM missiles.

I share their view that if the Chinese were foolish enough to launch an ICBM attack on this country they would first develop such aids to make the attack more devastating.

I suspect neither the Chinese nor the Russians are unreasonable enough to launch missiles which would have little chance of reaching targets.

I share the view that the same logic reduces the system's effectiveness against an accidentally launched missile. I am sure that if Russia has missiles that can be accidentally launched, those missiles will be equipped with devices to increase their chances of penetrating an ABM system.

I further share the thought that concern about accidental launching of Russian missiles must be balanced with concern about damage resulting from accidental explosion of any of our missiles, whether they be located near cities or in rural areas.

Moreover, I have the same misgivings as the physicists do about the ability of the system to perform its mission.

I believe there is a military maxim that if the attacker is willing to pay the price, any defense can be beaten. In the case of the ABM system, the price to defeat the defense is minuscule in comparison to the cost of building the defense.

The logic is clear. No ABM system without more research, and probably, not even then.

I urge all citizens opposed to deploying the ABM system to make their views known publicly.

While it may be easy to fool an ABM system with decoys and clouds of metal wire to fog the system's radar, it is not so easy to cut through the decoys and fog put forth by some supporters of the ABM system. Only the support of concerned citizens will insure that logic will pierce the wall of fog and confusion now surrounding this proposal.

Finally, Mr. President, I am asking the Secretary of Defense to comment on this letter. It is a document that I believe should be read thoughtfully by all of us who share responsibility for the decision as to whether we go ahead with the deployment of this system.

The VICE PRESIDENT. The Senator's time has expired.

Mr. MCGOVERN. Mr. President, will the Senator yield?

Mr. SYMINGTON. Mr. President, I ask unanimous consent for 2 additional minutes.

Mr. GOLDWATER. Mr. President, I would have to object. My remarks are very brief.

The VICE PRESIDENT. Objection is heard.

EMBARGO ON MEXICAN TOMATOES

Mr. GOLDWATER. Mr. President, a few days ago I referred to the fact that the Secretary of Agriculture placed an embargo on tomatoes grown in Sonora, Mexico. At times there is reason for an embargo, but not in this case. Now we find that the American housewife is the victim. One housewife wrote that the embargo has raised the price of tomatoes to 11½ cents each and that they just sit in the grocery stores getting too ripe; that the housewives will not pay such high prices for a tomato as big as a billiard ball.

I ask unanimous consent that an article which appeared in the Wall Street Journal on the whole subject may appear at this point in my remarks, with the hope that the Secretary of Agriculture and the Secretary of State will read it and realize the damage being done to Mexican-American relations.

There being no objection, the article was ordered to be printed in the Record, as follows:

CURBS ON TOMATOES FROM MEXICO CAUSE U.S. PRICES TO RISE: MEXICAN FARMERS ARE ENRAGED AS THEIR CROPS ROT—FLORIDA GROWERS HAD URGED RESTRAINTS

(By Norman Pearlstine)

NOGALES, MEXICO.—U.S. housewives and Mexican tomato farmers have a common complaint these days.

Neither is happy with the supply of fresh tomatoes in U.S. supermarkets. And they can both look to a common "villain"—the U.S. Department of Agriculture.

The reason: On Jan. 8, at the urging of Florida growers who compete with Mexico to supply winter tomatoes to U.S. markets, the Agriculture Department slapped a set of minimum-size restrictions on all tomatoes sold in the U.S. The chief effect of the complicated restrictions was to cut sharply the imports of Mexican tomatoes—and to drive U.S. prices as much as 30% higher than a year ago.

While U.S. housewives are irked with the

price increases, Mexican tomato farmers are enraged as they watch tons of their tomatoes being devoured by cattle or simply rotting in heaps along highways. "The whole of Mexico feels stabbed in the back," says Raul Batiz, a farmer from Culiacan and president of the 20,000-member Confederation of Agriculture Associations of Sinaloa.

For many Mexicans, the tomato situation has begun to assume the proportions of a major international incident. Mexican government officials and newspapers have reacted angrily. Mexico's ambassador to the U.S., Hugo B. Margain, filed a formal protest with the State Department, and newspaper editorials depict the tomato regulations as an example of how the big Yankee likes to push around his diminutive neighbor. One cartoon depicts a large Uncle Sam stabbing a small Mexican farmer in the back. The Mexican bleeds catsup.

GOOD FOR EVERYBODY?

The Florida growers who called for the size restrictions say they can't understand the furor. "If the restrictions were removed, we would have a demoralized, chaotic market in the U.S. within a week," says Jack Peters, manager of the Florida Tomato Committee, a grower group that has authority under Federal law to draw up tomato size, maturity and grade requirements for the Agriculture Department. "What we're doing is good for the entire industry, in Florida and in Mexico."

The disputed regulations provide that mature green tomatoes (those that ripen after they are picked) can't be sold unless they are more than two and 9-32 inches in diameter. Vine-ripened tomatoes must be at least two and 17-32 inches in diameter.

Florida growers contend the regulations aren't discriminatory because they're applied equally to both foreign and domestic tomatoes. But Mexican farmers point out that the regulations are more lenient on green tomatoes—which comprise almost 85% of the Florida crop and only about 10% of Mexico's.

Mexican growers say the size restrictions have barred at least 30% of their crop from U.S. markets this winter, and the figure will rise to about 50% in coming months. Florida growers, meantime, acknowledge that only 15% to 20% of the Florida crop is affected.

SHARP RISE IN PRICES

The effect on U.S. prices is evident. Food stores in the New York area recently have been selling tomatoes for as much as 65 cents a pound, and in Washington and other cities the price runs around 49 cents. A year ago, when bad weather and blight in Mexico had driven prices to what were then considered unusually high levels, the average price was 42.8 cents a pound. Two years ago it was 34.2 cents. (During the summer months, prices are considerably lower because U.S. domestic production increases sharply.)

Albert Conard, secretary-manager of the West Mexico Vegetable Distributors Association at Nogales, Ariz., just across the border from here, warns that if the regulations aren't lifted, tomatoes will soon be selling generally for as much as 69 cents a pound.

The operators of U.S. supermarkets are also unhappy over the size restrictions because they fear they will lose customers as prices rise. "Many women are already leaving tomatoes out of their salads," says the producer supervisor of one big supermarket in Dallas.

Some tomato connoisseurs say rising prices aren't the only reason housewives are reluctant to buy tomatoes. They contend that the artificially ripened tomatoes now making up the bulk of the market aren't as tasty as the vine-ripened Mexican tomatoes that have suffered most from the ban. Kroger Co., operator of one of the largest U.S. supermarket chains, says: "It has been conclusively shown in many marketing areas that

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consumers prefer the vine ripe type. They have consistently better flavor."

In Mexico, farmers say the ban on small tomatoes has begun to have serious economic impact. Mr. Batiz says almost 15,000 of the 100,000 workers who cultivate tomato fields have been laid off in Sinaloa and Sonora. These two "salad bowl" states produce most of Mexico's tomatoes for export, which in recent years have brought in about \$80 million a year. More layoffs are likely, he says.

Many farmers say they fear it will be hard to find financing for next year's planting, and some growers talk bitterly of shifting their purchases of machinery, seed and fertilizer from the U.S. to other nations next year. "The U.S. encouraged us to grow a big crop, using machinery bought in the U.S., and now they're trying to keep us from selling it," says Mr. Batiz.

The U.S. had indeed encouraged expansion of the Mexican tomato industry. Agriculture experts from the U.S. have made periodic visits to the area to offer advice on increasing production, and U.S. funds helped finance an irrigation project that opened up additional hundreds of acres to tomato growing in Sinaloa last year. Exports of Mexican tomatoes to the U.S. have risen sharply from 103 million pounds in the 1956-57 season to a peak of 386 million pounds two seasons ago. Mexican growers had expected, prior to the size restrictions, to ship a record crop this season.

For many citizens of this border city, which is a shopping mecca for U.S. tourists as well as a major gateway for export of Mexican produce, the size restrictions on tomatoes appear to be just another step in a U.S. "plan" to discriminate against Mexico. The tightening last year of restrictions on the amounts of liquor and duty-free merchandise Americans can take home from foreign countries already has caused considerable economic strain here.

"What are you gringos trying to do to us?" complains a waiter in a downtown Nogales restaurant. "You let the Japanese sell all kinds of stuff, but you won't take our tomatoes."

Marlo de la Fuente, owner of the Nogales bull ring and a long-time promoter of improved Mexican-American relations, says: "We've been working hard to build good relations down here, and now some jerk in Florida comes along and tells us not to sell our tomatoes. What's next? If this keeps up, in another 10 years we'll be shooting across the line at each other."

ARIZONA'S NEW NATIONAL AIR ACADEMY

Mr. GOLDWATER. Mr. President, last week I introduced an amendment for Senator FANNIN and myself which would provide recognition for the role colleges and universities might have in the overall efforts to solve air traffic control problems.

Everyone knows that the air traffic crisis has reached the urgency stage. Speaking as a friend of aviation with a love for being in the cockpit, I believe we need to look hard at all the different approaches which human ingenuity can devise to solve the logjam in our skies and insure the safety of the public.

This is why Senator FANNIN and I joined as cosponsors of the bill S. 1070, proposed by Senator BROOKE, to establish the Commission on Air Traffic Control. This body will be composed of experts from the aviation field with a duty to study and report back within 1 year on all aspects of air traffic control problems.

One important phase of these problems is the need to increase the numbers of qualified persons who can enter the aviation field as controllers. The plain fact is that while air traffic has been increasing at about 20 percent a year, the professional controller force has remained nearly at the same level. It is here—in solving the education gap—where colleges and universities can make a major contribution.

In order to focus on this means of helping to solve the shortage of qualified personnel in the field of air traffic control and in the entire field of aviation, Senator FANNIN and I have offered an amendment to S. 1070 to provide specific authority for the Commission to study the feasibility of a program of unrestricted Federal incentives to encourage colleges to develop and provide courses in the field of air traffic control and to add two members to the Commission representing the academic world. In this connection, the Commission should certainly give a close look at existing authority in this area such as the possibility that the Federal Aviation Administration could begin awarding scholarships to help fill our emergency needs.

That there can be useful courses in this field at the college level is proven. I am happy to say, by an example happening in my own State of Arizona. Mr. President, there is an entire aviation center now taking shape in the Gila River Indian Reservation area of central Arizona. The proposed name of this academy is the "National Center for Research and Development in Aviation Education and Training"—or to slim it down, the National Air Academy.

This is a fantastic venture, the likes of which has long been needed by aviation. The original idea for the academy came from officials and instructors at Arizona State University, with particular credit for organization due to Mr. Victor Rothe.

The center has been the subject of a U.S. feasibility study by the Economic Development Administration and has been found to be eligible for funding by that agency.

As it now stands, this project will be established and operated as a cooperative effort between the aviation industry, Arizona State University, and the Federal Government. Pursuant to this goal, a nonprofit corporation, the Aviation Research and Education Foundation, has already been established in Arizona.

By 1972 this center is expected to be turning out 2,000 aviation students, with facilities for 1,000 students planned to be ready by late in 1970. At present students in this field are quartered at Arizona State University, where right now they can obtain a degree in aeronautical technology including at least six courses on air traffic control.

Thus, Mr. President, formalized programs on air traffic control can be made available by colleges. Controllers of the future can acquire a solid background for their vocation in a rounded aviation program offered at the university level. For this reason, I believe that our amendment, if adopted, will lead to a practical

remedy for helping to solve one major area of the air traffic crisis.

In order to present a complete description of the national center under development in Arizona, I ask unanimous consent that there be printed in the RECORD at the conclusion of my remarks an article which appeared in the January-February 1969 issue of the PATCO Journal, by Mr. Victor Rothe, entitled "Arizona's New National Air Academy."

There being no objection, the article was ordered to be printed in the RECORD, as follows:

ARIZONA'S NEW NATIONAL AIR ACADEMY

Revolutionary educational approach, and proper recognition of aviation skills, are the basis for two and four-year curriculums for air traffic controllers (now being worked out), pilots, aviation technologists and aviation mechanics. Parallel transfer from one specialty to another may be possible.

Recent studies of aviation problems made for the Aviation Center indirectly unearthed a solution for getting new controllers quickly. The FAA could immediately begin to award scholarships in sufficient quantities to fill our emergency needs. It could request proposals from interested junior colleges and universities for a 2-year instruction program for air traffic controllers. FAA could then provide scholarships, where training facilities were acceptable. This would provide a stop-gap measure for more controllers, until more formalized programs in colleges and other teaching areas are available.

At first, it can seem like some dastardly plot. Air traffic is increasing around 20 percent a year, while the professional controller force for the past five years, has remained fairly static. However, the resultant inevitable, yet unforfeitable squeeze on controllers is but one serious symptom of an overall ill—a shortage of qualified personnel across the board in aviation.

Each year, not only are there greater demands for more controllers, pilots, aviation mechanics, and technicians of all types, but they have to be more on the ball. Aviation technology is barreling along at supersonic speeds. Transportation air needs are accelerating too. Yet the techniques by which aviation people are trained, for their job creak along at a Model T pace, in many ways.

The old pipelines of military trained personnel are drying up. They can't produce the quantity of people needed nor can they train them adequately for the unique demands of modern civil aviation. Various courses for aviation skills have emerged, spurred in part by the GI bill, it is true. But they have not represented a nationally coordinated look at a basic group of problems we face.

WHAT WE DON'T KNOW

In brief, we don't know fully the qualities that make for a good controller, pilot, or aviation man. We don't know fully what the best means are for training them for given positions. And we lack a link-up between aviation industry and the academic world so that what is happening today—not last year or last week—is incorporated into the training in a classroom or in a cockpit.

One solution to the education "gap" in aviation is taking shape now in the Gila River Indian Reservation area of central Arizona. That may seem like an unusual place to locate a "National Center for Research and Development in Aviation Education and Training." But there are no geographical limits to where schools are located today. Here the climate and area is ideal for aviation and flying. Here too, the fact that the Reservation represents a depressed area has allowed funding for the academy by the U.S. Economic Development Administration.

Bob
Let's file the
Clifford "posture"
statement - for
future reference
✓